Frauds, Markets, and Fraud-on-the-Market: The Tortured Transition of Justifiable Reliance from Deceit to Securities Fraud

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Abstract: This article examines the reliance element of the securities fraud action. An analysis comparing the economic function of common law deceit to that of securities fraud is used to appraise the current law and to propose refinements. This article argues that neither participants in securities markets nor the society are indiffer-

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ent to the risk of misrepresentations about securities and that this risk is larger than the risk created by misrepresentations about nonfinancial goods (real goods). Therefore, the fear of misrepresentations about securities is more undesirable than the fear of misrepresentations about real goods. Consequently, the securities fraud action should create stronger deterrence than the deceit action. The fraud-on-the-market presumption of reliance intensifies the deterrence of the securities-fraud action by making class actions more likely to succeed and by allowing larger classes, hence, larger damage awards than under the actual reliance required for deceit liability. Although the economic analysis supports the expansive securities fraud action that the fraud-on-the-market presumption of reliance creates, the presumption also has the important drawback that it may be rebutted if the trader does not "trust the integrity of the market." This rebuttal exposes informed traders to fraud and, therefore, undermines market efficiency. It is easy to overcome this drawback (while retaining the beneficial effects of the rebuttal) by replacing it with the traditional avoidable consequences defense to the causation that reliance shows.

I. INTRODUCTION

In 1976 the New York Nets had a very gifted basketball player, Julius "Dr. J" Erving. After including Dr. J in their season ticket advertising, the Nets traded their star. Several season ticket buyers, who alleged that they bought the tickets to see Dr. J, attempted to bring a class-action lawsuit for deceit on behalf of all who bought tickets before the trade. The court refused to certify the class because questions of individual reliance on the ads predominated over questions common to the class.[1] Had the tickets been securities, the fraud-on-the-market theory would have presumed the ticket-buyers' reliance and the class action would have been certified. Why should reliance differ so radically between deceit and securities fraud?

This Article compares the two torts that may arise from a misrepresentation. A lie about a financial good (i.e., a security[2]) may give rise to securities fraud liability,[3] while a lie in a nonfinancial setting may give rise to liability under the common law tort of deceit, which some juris-

1. Strauss v. Long Island Sports, Inc., 401 N.Y.S.2d 233, 235-36 (N.Y. App. Div. 1978).

2. The terms "security" and "financial good" will be used as synonyms throughout this article in their economic definition. The legal definition of a security is a much more complex issue that has reached the Supreme Court at least nine times. *See* LOUIS LOSS, FUNDAMENTALS OF SECURITIES REGULATION 165 (2d ed. 1988). For a law-and-economics analysis of the definition of a security, see William J. Carney, *Defining a Security: The Addition of a Market-Oriented Contextual Approach to Investment Contract Analysis*, 33 EMORY L.J. 311 (1984).

3. The most famous securities fraud rule is Rule 10b-5, 17 C.F.R. § 240.10b-5 (1994), issued by the Securities and Exchange Commission ("S.E.C.") under the authority of Section 10(b) of the Securities and Exchange Act of 1934. 15 U.S.C. § 78a-7811 (1988). Other

dictions have codified.[4] The torts of deceit and securities fraud are very similar, as is apparent in their shared elements. Both require (1) a misrepresentation, (2) the appropriate state of mind (scienter, i.e., knowledge of falsity and intent to deceive), (3) reliance on the misrepresentation, and (4) injury (5) caused by actions taken in reliance on the misrepresentation.[5] The two torts, however, have different standards for reliance, which have vast ramifications.

Reliance on a misrepresentation for liability in common-law deceit must be actual and justifiable. By contrast, liability in securities fraud may arise under presumed reliance according to the fraud-on-the-market theory, provided the misrepresentation is material.

Reliance is in a state of flux, both in its common law deceit and its securities fraud incarnations, which makes its analysis important and particularly timely. The current Congress, in its deregulatory spirit, has entertained the possibility of eliminating the fraud-on-the-market reliance presumption.[6] Conversely, the California Supreme Court recently refused to extend the fraud-on-the market presumption of reliance to

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regulations of securities fraud include SEC Rule 14e-3, 17 C.F.R. § 240.14e-3 (1994), and SEC Rule 12b-20, 17 C.F.R. § 240.12b-20 (1994).

Throughout the article, securities fraud will refer to fraud in a nameless transaction on an organized exchange. Face-to-face transactions are analytically equivalent to the type of transactions that common law deceit addresses, and securities fraud jurisprudence applies deceit-like rules to them. Therefore, they will not be distinguished from common law deceit. This article will justify the strictness of securities fraud on the desirability of liquidity and efficiency in securities markets. The absence of these features from the face-to-face market obviates a departure from common law.

4. *E.g.*, ALA. CODE §§ 6-5-100 to -104 (1975); CAL. CIV. CODE §§ 1709-1711 (West 1985); GA. CODE ANN. §§ 51-6-1 to -4 (1992).

5. *See, e.g.*, Loss, *supra* note 2, at 712 (enumerating knowledge of falsity and justifiability separately).

The environment of securities markets causes different weight to be given to each of these elements as they are transferred into the world of securities fraud. Materiality substitutes for justifiability. *See, e.g.*, Huddleston v. Herman & MacLean, 640 F.2d 534, 543 (5th Cir. 1981) (listing elements of private action in direct and personal transactions as "(1) misstatement or an omission (2) of material fact (3) made with scienter (4) on which the plaintiff relied (5) that proximately caused his injury."); 3 ALAN R. BROMBERG & LEWIS D. LOWENFELS, BROMBERG & LOWENFELS ON SECURITIES FRAUD AND COMMODITIES FRAUD 195 (categorizing private action elements in open market impersonal transactions into misrepresentation and nondisclosure, materiality, scienter, privity, reliance, causation, and closed transaction). Not listed is the closed transaction element that Bromberg & Lowenfels admit has many exceptions and "is being whittled away." *Id.* at 222.1. The fate of privity is similar. *Id.* at 206.

6. Section 204 of 104 H.R. 10, The "Common Sense Legal Reforms Act of 1995," 104th Cong., 1st Sess., would have added Section 10A to the Securities and Exchange Act of 1934. The proposed section, which would define the requirements for maintaining a securities fraud action, Subsection c read:

> (c) Reliance.—In any action arising under section 10(b) based upon a material misstatement or omission concerning a security, the plaintiff must prove that he or she had actual knowledge of and actually relied on such statement in connection with the purchase or sale of a security and that the misstatement or omission

deceit.[7]

Part II of this Article constitutes the heart of its law-and-economics analysis of the two torts. Taking issue with recent arguments that securities fraud is overprotective of investors,[8] Part II argues that the tort addressing misrepresentations about financial goods must have stronger deterrence than the tort addressing misrepresentations about real goods. The fraud-on-the-market presumption increases deterrence because (1) by making securities fraud class actions easier to certify it increases the probability that they will be brought, and (2) by increasing the size of the class it increases the expected damage award.[9]

The argument that misrepresentations about financial goods should be deterred more than those about real goods is based on differences between the price-formation mechanisms for the two goods. Parts IIA and IIB introduce the argument by describing these mechanisms. Parts IIC and IID present the argument's two stages. Part IIC argues that the danger of false prices due to misrepresentations is greater in financial markets than in markets for real goods because misrepresentations about financial goods tend to influence price more, last longer, attract wider (potentially global) attention, be more frequent, and be more costly to uncover than misrepresentations about real goods. Part IID then argues that the danger of financial misrepresentations is socially undesirable. Contrary to recent assertions,[10] market participants cannot diversify against the risk of misrepresentations so as to be indifferent to it. There-

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proximately caused (through both transaction causation and loss causation) any loss incurred by the plaintiff.

The version, which passed over the President's veto, was amended by the Senate, dropping that clause. Private Securities Litigation Reform Act of 1995, Pub. L. No. 104-67, 109 Stat 737 (1995).

7. Mirkin v. Wasserman, 858 P.2d 568 (Cal. 1993).

8. The lead article favoring relaxation of securities fraud rules while also focusing on fraud-on-the-market reliance is Paul G. Mahoney, *Precaution Costs And The Law Of Fraud In Impersonal Markets*, 78 VA. L. REV. 623 (1992). In a similar spirit are Daniel R. Fischel & David J. Ross, *Should The Law Prohibit "Manipulation" In Financial Markets?*, 105 HARV. L. REV. 503 (1991); Daniel R. Fischel, *Efficient Capital Markets, the Crash, and the Fraud on the Market Theory*, 74 CORNELL L. REV. 907 (1989); Jonathan R. Macey et al., *Lessons From Economics: Materiality, Reliance, and Extending the Reach of* Basic v. Levinson, 77 VA. L. REV. 1017 (1991); Jonathan R. Macey & Geoffrey P. Miller, *The Fraud-On-The-Market Theory Revisited*, 77 VA. L. REV. 1001 (1991); Jonathan R. Macey & Geoffrey P. Miller, *Good Finance, Bad Economics: An Analysis of the Fraud-on-the-Market Theory*, 42 STAN. L. REV. 1059 (1990); Richard A. Posner, *Law and the Theory of Finance: Some Intersections*, 54 GEO. WASH. L. REV. 159 (1986).

9. Securities fraud is easier for the plaintiff to prove for other reasons as well. An example is the evidentiary standard. Securities fraud must be proved only by a preponderance of the evidence, while deceit must be shown with clear and convincing evidence. *See* Herman & MacLean v. Huddleston, 459 U.S. 375, 387-88 (1983).

10. *See* Mahoney, *supra* note 8, at 639 ("Moreover, the losses associated with lies issuers tell to secondary-market participants are diversifiable risks from the latter's viewpoint. Investors who

fore, market participants react to this risk in a socially undesirable way. Those market participants who trade motivated by information ("informed traders") react to the risk of tainted information by being less willing to trade. Since the trades of informed traders correct prices, their reduction is tantamount to a reduction in market efficiency. Those market participants who trade in response to saving and consumption needs ("uninformed traders") have incentives to avoid trading or to become informed (both of which reduce market liquidity), and to require greater return from their investments (which increases the cost of capital). Thus, the fear of securities fraud undermines the service of capital markets, both in the optimal allocation of capital and in the provision of low-cost capital to firms.

Part III applies the preceding analysis to the rules of securities fraud. Part IIIA reminds us that reliance in a deceit action is, in fact, a test of causation: whether the deceived party's actions were caused by the misrepresentation. Part IIIB contends that the fraud-on-the-market reliance presumption is just an adaptation of the same causation-testing to a new environment. Causation has changed in modern securities markets; injury can be caused without actual reliance. Part IIIB also argues that the presumption of reliance has not yet completely adapted to its new surroundings. While uninformed long-term investors are adequately protected against fraud, informed speculators are inexplicably exposed to it. Informed traders have no recourse because if they invoke the presumption of reliance, it may be rebutted due to their failure to trust the integrity of the market.[11] But this does not simply imply that the rebuttal for distrusting the market should be eliminated, since distrust may signal lack of causation. The simpler traditional concept of avoidable consequences would allow, however, the accurate assessment of which informed traders' injuries were caused by the misrepresentation, and which were the traders' own fault. This improvement would be crucial, because it would restore the incentive for informed trading. The current presumption undermines the potential contribution of informed traders to accurate pricing by the market. Thus, the conclusion of this analysis is that fraud-on-the-market is a desirable but incomplete development in securities fraud.

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hold the market portfolio and trade only in response to changes in their income and consumption levels are as likely to make trading gains as trading losses from secondary-market fraud.").

11. Zlotnick v. TIE Communications, 836 F.2d 818, 823 (3d Cir. 1988) (holding an informed trader, short-seller, could not use the presumption of reliance because, while the presumption's premise is market efficiency, the short seller believed that the market price overestimated the stock's true value; therefore, he did not trust in the integrity of the market).

II. COMPARING THE ECONOMIC FUNCTION OF DECEIT TO THAT OF SECURITIES FRAUD

This Part focuses on the economic rationale for the two torts, deceit and securities fraud. Their justification is founded on how prices are formed in the underlying markets, markets for real goods in the case of deceit and markets for financial goods in the case of securities fraud. Sections A and B review how prices are formed in each respective market. Each buyer of a real good may place a different subjective value on it. Regardless of each market participant's subjective valuation of the real good, the market-clearing price equals the valuation of only the last (or marginal) buyer and seller.[12] Financial goods, by contrast, are valued equally by all buyers and sellers, but this valuation is uncertain because it is based on expected future performances. Conventional law-and-economics analysis argues that rules attaching liability to misrepresentations are desirable because they prevent wasteful verification of information by market participants.[13]

In order to examine whether preventing verification is more desirable in financial markets, Section C compares the influence of misrepresentations in real and financial goods. The price of real goods tends to be influenced for a shorter time and by a smaller amount than the price of financial goods. Moreover, misrepresentations about real goods tend to be less frequent, more costly to verify, and noticed locally instead of globally. Consequently, stricter measures against fraud are dictated in financial markets. Section D addresses the counter-argument that fraud in financial markets does not matter. Market efficiency depends on informed trading that cannot be diversified. The fear of fraud also influences uninformed traders, whose trading may be diversified, but not so as to eliminate the risk of fraud. Their aversion to fraud-induced losses becomes an aversion to trading. Thus, the reaction to fraud is akin to the reaction to a transaction cost, which provides incentives to trade less frequently, with more information, and for higher returns. The result is less efficient and less liquid markets, and a higher cost of capital for corporations.

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12. The marginal buyer and seller are the very last buyer and seller, the ones who are indifferent about whether they enter into the transaction. In other words, the marginal buyer would not buy if the price were any higher and the marginal seller would not sell if the price were any lower.

13. *See, e.g.*, GUIDO CALABRESI, THE COSTS OF ACCIDENTS 26-31 (1970) (tort liability prevents wasteful precaution efforts); Daniel R. Fischel, *Use of Modern Finance Theory in Securities Fraud Cases Involving Actively Traded Securities*, 38 BUS. LAW. 1, 16 (1982) (arguing that an important function of the presumption of reliance is to prevent costly precautions by investors who cannot meet the standard reliance test).

A. *Real Goods' Price Formation: Marginal Pricing with Subjective Valuation*

Real goods are such because their buyers put them to real use. Cars, chairs and washing machines are not used to preserve savings. In contrast to stocks, bonds, and bank deposits, which are held in order to be liquidated, real goods are owned for their own sake. Buyers of real goods decide whether to buy them based on how much utility they will derive from the goods. Buyers of financial goods decide whether to buy them based on the funds they expect the goods to return in the future. The characterization of any single good as a financial or real good is rarely clear, but this does not interfere with the analysis.[14]

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14. Goods routinely have both financial and real features, offering to their owners wealth-storage as well as direct enjoyment. Consequently, prices of durable real goods may be influenced by their expected resale values. For example, car advertisements stressing resale values show that car manufacturers think that their clientele find cars more desirable if they have higher resale values. Thus, cars sold for personal use may take on characteristics of financial goods.

Similarly, financial goods may offer their owners real enjoyment: A controlling block of a corporation's shares, for example, comes with the prestige of the chairman of the board, a corner office, an executive secretary and a limousine. Even debtholders may get the real good of control through a bankruptcy reorganization. The legal environment, sensitive to this change of character, did not consider controlling blocks of shares securities for the purpose of the Securities Acts. *See, e.g.*, Christy v. Cambron, 710 F.2d 669, 672 (10th Cir. 1983) (81% block not a security); Sutter v. Groen, 687 F.2d 197 (7th Cir. 1982) (presumption that sale of 50% block does not involve a security); Oakhill Cemetery of Hammond, Inc. v. Tri-State Bank, 513 F. Supp. 885 (N.D. Ill. 1981) (sale of 50% block did not involve a security). This interpretation was reversed by the Supreme Court in Landreth Timber Co. v. Landreth, 471 U.S. 681 (1985).

While real and financial characteristics often coexist in a good and its pricing mechanism consequently is not purely either of the two described here, we need to assume a purely real and purely financial good to observe the theoretical markets. The character, be it real or financial, that dominates in each good will determine which is the dominant market mechanism for it. When extraordinary circumstances change the good's character, the pricing mechanism will change as well.

The severe rules of securities fraud, which this article supports based on the pricing mechanism of financial goods, may be excessive for real goods. But this does not create problems for the infrequent and temporary instances when financial goods take on real goods' characteristics (as they may, for example, during a fight for corporate control or in a bankruptcy proceeding). Neither commentators nor the law have ignored this occurrence. Professor Lucian Bebchuck, for example, builds a model analyzing the transfers of control based on the "private benefits of control," i.e., the utility the controller gets from the financial good. Lucian A. Bebchuck, *Efficient and Inefficient Sales of Corporate Control*, Q.J. ECON. 957 (Nov. 1994). Such events are also addressed by special rules, such as the prohibition on the sale of corporate office, e.g., Brecher v. Gregg, 392 N.Y.S.2d 776 (1975), or the liability for sellers of corporate control to looters. *See, e.g.*, Clagett v. Hutchison, 583 F.2d 1259 (4th Cir. 1978); Harris v. Carter, 582 A.2d 222 (Del. Ch. 1990).

On the other hand, the insufficient severity of common law deceit has been recognized regarding some real goods. For example, typical "lemon laws" change deceit rules if the object of the transaction is a car. *See* Heather Newton, *When Life Gives You Lemons, Make A Lemon Law: North Carolina Adopts Automobile Warranty Legislation*, 66 N.C.L. REV. 1080 (1988); Jeffrey L. Reed, Comment, *The Tennessee Consumer Protection Act: An Overview*, 58 TENN. L. REV. 455 (1991).

Furthermore, the pricing of real goods is different because they are subject to the law of diminishing returns, while financial goods are not. Family cars, milk and chairs are prime examples of goods that are more desirable in small quantities. The tenth car in the driveway, the twentieth gallon of milk in the refrigerator and the hundredth chair in the living room are superfluous, even burdensome, and clearly less desirable than the first unit of each.[15]

Let us study the interaction of these typical market participants in an example of a purely real good.[16]

Example of Price-Formation in Real Goods: A real good has nine potential buyers and nine potential sellers. Buyer one receives $1 of use from one unit of the good, buyer two receives $2, and so on. A second unit is of negligible use to any buyer (which is an extreme manifestation of diminishing returns). Seller one produces a single unit of the good for a cost of $1, seller two for $2, and so on. The cost of producing a second unit is extraordinary for all sellers (again, we see diminishing returns). In this market, five units of the good would be produced. Buyers nine through five would buy the units sold by sellers one through five. The market-clearing price for the good is $5. In a graphic representation of this market, the supply and the demand curves show how many goods would be bought or sold at each price. For example, the demand line in the following figure starts at the point which corresponds to a quantity of one at a price of $9. This graphic representation illustrates that if the price were $9 then there would be a demand for only one unit of the good, that from Buyer nine. The market "clears" at the price where the number of goods bought is equal to the number sold.

15. *See, e.g.*, RICHARD H. LEFTWICH, THE PRICE SYSTEM AND RESOURCE ALLOCATION 305-18 (5th ed. 1973).

16. The analysis that will be used, the simple downward-sloping demand and upward-sloping supply curve, is the simplest core concept of microeconomic theory. For a more technical discussion, see, e.g., DAVID M. KREPS, A COURSE IN MICROECONOMIC THEORY 263-267 (1990).

THE SUPPLY/DEMAND PRICING MECHANISM FOR REAL GOODS

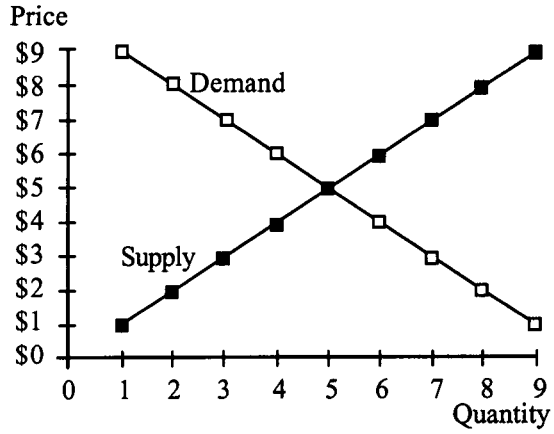

Figure 1: A graphic representation of the pricing mechanism that applies to real goods. The supply and the demand curves depict the number of units of goods that would be bought or sold at each price. The market "clears" at the price that allows all goods that are offered for sale to be bought (here at a price of $5). The numbers correspond to the example in the text.

The point of the example is that each market participant may place a purely subjective value on the good different from its price, while the market price coincides with the valuations of the "marginal" buyer and seller. Those who value the good higher than its market price cannot gain by buying more because the law of diminishing returns ensures that additional units will be worth less to them than the market price. The same applies for the sellers; they cannot profitably produce additional units.

B. *Financial Goods' Price Formation: Uncertain But Objective Valuation and Pricing*

The fact that all financial goods perform the same function, carrying wealth through time, makes them equally valuable to all buyers and sellers. The only distinguishing features between financial goods are the return that each promises (i.e., price appreciation plus distributions such as dividends or interest) and the risk at which each exposes its owners' capital. Financial goods that offer the same return at the same risk are fungible. Furthermore, since each unit of a financial good performs the same function, financial goods are not subject to the law of diminishing returns.

The most widely accepted economic theory describing the pricing mechanism of financial goods is the Capital Asset Pricing Model (CAPM). Its principal author, Professor William Sharpe, received the Nobel Memorial Prize for Economics in 1990 together with Professor

Harry Markowitz, author of the Modern Portfolio Theory.[17]

The Modern Portfolio Theory laid the foundation for the CAPM by separating the risk of securities into two categories. Only one matters to typical investors. The theory attributes the volatility of securities' prices either to circumstances unique to the issuing corporation or to circumstances associated with the overall economy. The Modern Portfolio Theory explains that the former "unsystematic" risk can disappear with diversification. The holder of the hypothetical War Company, which will perform poorly in peace, does not fear peace if she also holds Peace Company. Peace Company's success in peace will cancel out War Company's poor performance. The holder of this diversified portfolio is indifferent to war or peace.

Investors cannot diversify against fluctuations caused by economic conditions, since they will influence all securities in the same way. The sensitivity of each security to the performance of the economy is undiversifiable, systematic risk. This sensitivity is measured statistically by the "beta" coefficient, which compares changes in the security's returns to the returns of a market index. If the security's returns change on average as much as the market's, then their correlation is perfect and the security will have a beta of 1. If the security moves half as much as the economy, its beta is .5, if it moves twice as much its beta is 2.

Based on these Modern Portfolio Theory conclusions, the CAPM explained that since investors are only sensitive to the systematic risk of each security, securities with equal betas should offer equal returns. If securities deviate from the price that offers equal returns, then a profitable trading strategy (an arbitrage[18] opportunity) arises. For example, if the security's price were too high for its beta, one could sell it and with the proceeds buy a mixture of (a) risk-free debt or credit which by definition has zero beta; and (b) the market index. The mix of the market index and the debt must have the same beta as the security sold.[19] Since the security and the mixture have the same beta they have equal

17. A most readable introductory collection of materials appears in RONALD GILSON & BERNARD BLACK, THE LAW AND FINANCE OF CORPORATE ACQUISITIONS 81-134 (2d ed. 1995); *see also* Daniel R. Fischel, *Use of Modern Finance Theory in Securities Fraud Cases Involving Actively Traded Securities*, 38 BUS. LAW. 1, 3-5 (1982).

18. An arbitrage transaction involves buying and selling two nearly identical goods or securities. Arbitrageurs sell the overvalued one and buy the undervalued one. When the undervaluation or overvaluation has passed, the arbitrageurs reap their profits by selling the good or security they bought and buying back the good or security they sold. The ingenuity of this double transaction is that the arbitrageurs are indifferent to changes in the value of the good or security. Since they have both bought and sold it, they have no position on it. Changes in its value do not influence arbitrageurs' wealth. Arbitrageurs only have a stake in the relative change in value between the good they bought and the one they sold.

19. If the sold security has a beta of .5, that would correspond to a portfolio of 50% index and 50% risk-free debt. Securities issued by the government are considered risk-free because of the

expected returns. The arbitrageur has only to wait for the mispricing to disappear and then cash her profits. Empirical evidence has verified the proposition that securities are priced according to their beta.[20]

The supply and demand pricing mechanism does not disappear with financial goods. However, the assumption of costless arbitrage and the disappearance of diminishing returns change the picture dramatically. Supply and demand curves are horizontal. Any decrease in price results in unlimited buying; any increase results in unlimited selling. The next figure depicts the supply and demand interpretation of the CAPM.

THE HORIZONTAL SUPPLY AND DEMAND OF THE CAPM

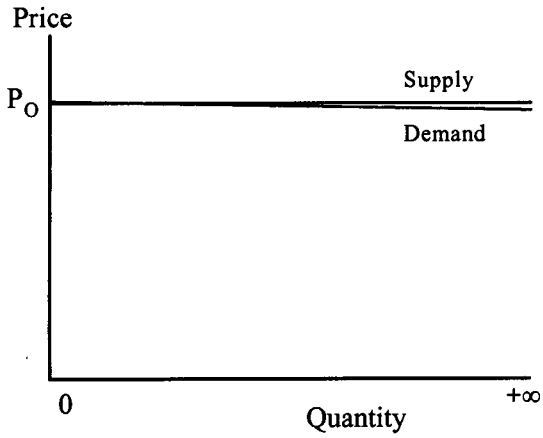

Figure 2: The graphic representation of the Capital Asset Pricing Model. According to the CAPM, everyone values the securities equally, the value P_o. Any price above P_o leads to infinite selling, as indicated by the horizontal supply curve showing supply going to infinity at prices above P_o. Any price below P_o leads to infinite demand.

Having briefly described the theoretical foundations of the two markets in which common law deceit and securities fraud operate, we must now compare the effects of misrepresentations in those markets. Since the purpose of the two torts is to eliminate wasteful verification, we will first examine how verification incentives are different in the two markets. After Section C shows how this incentive is stronger in financial markets, Section D will argue that the heightened concern about wasteful verification in financial markets is appropriate and justifies the more severe rule of presumed reliance in securities fraud.

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government's capacity to print money and satisfy its obligations. This ignores inflation risk, but is the closest thing to risk-free debt.

20. *See* Eugene F. Fama & James D. MacBeth, *Risk, Return, and Equilibrium: Empirical Tests*, 81 J. POL. ECON. 607 (1973). Their results are reproduced, along with a description of the CAPM, in RICHARD A. BREALEY & STEWART C. MYERS, PRINCIPLES OF CORPORATE FINANCE 162 (3d ed. 1988).

C. *Differences in the Incentive to Verify*

It is intuitive that misrepresentations have an adverse impact on participants in both real and financial markets. We will examine the effect of those misrepresentations in the context of the simple examples we have already set up.

Example of a Misrepresentation About a Real Good: Start by introducing a misrepresentation into the 9-buyer/seller example used to illustrate the pricing mechanism of real goods. A lie reaches two potential buyers and changes their beliefs about the good's usefulness. Suppose buyers one and two, who would have bought a unit at $1 and $2, respectively, are now persuaded to buy the units at any price up to $8.[21] *Now four units are demanded at $8, two by buyers one and two (the victims of the misrepresentation) and two by buyers eight and nine (buyer nine would actually pay up to $9). A fifth unit is demanded at $7, a sixth at $6 and a seventh at $5. Notice that the misrepresentation shifts the demand curve to the right by two units. While without the misrepresentation this market cleared at a price of $5, after the misrepresentation it clears at a price of $6.*

21. This example is distinguishable from Strauss v. Long Island Sports, Inc., 401 N.Y.S.2d 233 (N.Y. App. Div. 1978), where the Nets advertised Erving as a member of the team and then traded him. The misrepresentation there, "come see Erving play for the Nets," may imply higher utility for some basketball fans and lower utility for others, such as the fans of the Nets' opponents. Thus, the misrepresentation may not influence prices even though it may result in the tickets' highest valuing users not buying them.

The Nets example is more complex than the one in the text, but it underlines one more difference between real and financial goods. The complexity is that the single statement of the Nets has two different results, one on Nets' fans and one on their opponents' fans. Once the two effects are separated, the analysis is analogous to the one in the text.

The different ways that the same piece of information subjectively influences the goods' desirability is a characteristic of real goods that *Strauss* brings to focus. The only relevant statements about financial goods concern their risk and future returns. Two investors who agree on the meaning of a statement cannot then value the asset differently. If the statement implies higher returns or lower risk, it makes the asset more desirable for every investor.

A MISREPRESENTATION ABOUT A REAL GOOD

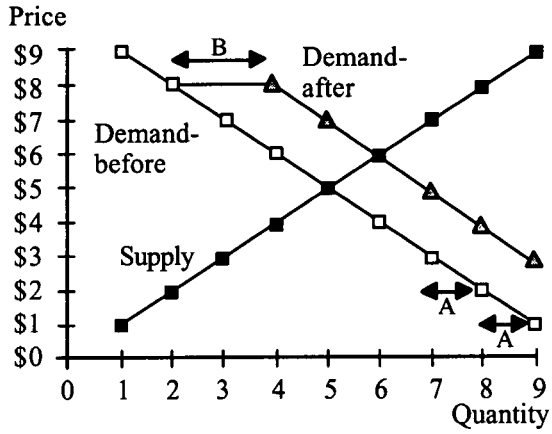

Figure 3: This is the graphic representation of a misrepresentation's interference with the typical market for real goods. Before the misrepresentation takes place, the "Demand-before" and "Supply" curves determine the price and quantity of the goods produced. According to the example above, five units are produced and they sell for $5 each. The effect of the misrepresentation is to change the subjective valuation of the good by two buyers, the one who would buy one unit at $2 and the one who would buy one at $1. These buyers' contribution to the "Demand-before" curve is marked by A, indicating the eighth and ninth units demanded. The misrepresentation, however, persuades these buyers that the good is worth $8, making them demand the third and fourth units at that price. This contribution to the demand curve after the misrepresentation is marked by B. The result is a shift to the right of the demand curve and a higher market-clearing price.

This misrepresentation has two striking features. First, it influenced buyer one's decision because buyer one would not have bought the good otherwise. If the misrepresentation had reached buyers nine through five it would have had no impact. Second, the size of the misrepresentation is much larger than its effect on price. It changed buyer two's valuation of the good from $2 to $8, a $6 change, while the price changed only $1. But there are more differences between the effects of a misrepresentation on real and financial markets.

Determining the effect of a misrepresentation about a financial good in terms of the supply and demand curve, using the CAPM, is elusive. The trading of those who believe the misrepresentation will form horizontal supply and demand curves at the price indicated by the misrepresentation (P_M). Those who do not believe it will form horizontal supply and demand curves at the original price (P_O). At any price between the two, the group that believes the misrepresentation would engage in unlimited buying and the group that does not believe in it would engage in unlimited selling. Neither the CAPM nor supply and demand curves offer any insight as to what the price would be in such a market.

A MISREPRESENTATION ABOUT A FINANCIAL GOOD

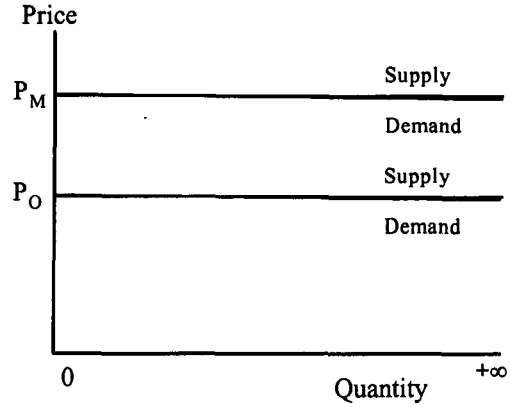

Figure 4: Trying to graphically illustrate the implications of a misrepresentation in terms of the CAPM does not result in an equilibrium. Those who do not believe the misrepresentation continue to consider the financial good worth its old price, P_O. Those who believe it consider the good worth its misrepresented value, P_M. But the CAPM would have all the former buying infinite quantities and the latter selling infinite quantities at any price between P_O and P_M. This disequilibrium is resolved by Market Microstructure, which explains the limits on trading activity among market participants with different valuations.

The inability of traditional economic methods to deal with heterogeneously informed traders in financial markets spurred the creation of a new method in economics, a method that focuses in even more detail than microeconomics on the interaction between market participants. It is known as Market Microstructure and its disciples use game-theoretical methods. The quest is not for the equilibrium price, but for the equilibrium strategy: the strategy that each trader will follow to break even. Once such a strategy is devised, every participant must react to the others' strategies and break even without giving other investors grounds to improve their strategies. Every strategy is the best response to every other one.

The problem of heterogeneously informed traders has been the object of Professor Sanford Grossman's work. His analysis, set out in his seminal book *The Informational Role of Prices*,[22] brings together the CAPM, heterogeneous information, and risk-aversion models. Grossman shows that the risk-aversion of informed traders precludes them from following the CAPM's strategy of unlimited buying and selling even if they have different valuations. Professors Anat Admati and Paul Pfleiderer bring into the analysis the competition among informed traders and the liquidity that uninformed trading generates.[23] They explain

22. SANFORD GROSSMAN, THE INFORMATIONAL ROLE OF PRICES (1989).

23. Anat R. Admati & Paul Pfleiderer, *A Theory of Intraday Patterns: Volume and Price Variability*, 1 REV. FIN. STUD. 3 (1988). In attempting to explain why trading volume clusters at certain hours of the day, Admati and Pfleiderer start with the proposition that once a time period

that the trading of the uninformed creates liquidity that attracts informed traders, who can derive greater profits in greater liquidity. But increased participation of the informed results in stronger competition for trading profits and trading that is more aggressive, which leads to faster correction of prices. Professor Albert Kyle brings time pressure into the analysis, and posits that even insiders will cause prices to reflect their inside information if there is a time after which they cannot trade.[24]

To summarize the two decades of work that followed the CAPM in one sentence, (a) risk-aversion of informed traders reduces their impact on price, (b) the market's liquidity increases the number of informed traders and intensifies their competition, thereby increasing their impact on price, and (c) time pressure (such as an impending public announcement of their information) increases their impact.

Market microstructure suggests that the market will react to misrep-

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has higher trading volume, it also offers traders greater liquidity. The liquidity attracts both informed and uninformed traders. The informed will turn their information into higher profits by placing larger trades. The uninformed will be able to trade with a less adverse price reaction. The conclusion is that the uninformed prefer the trading period in which the informed cluster despite the greater overall profits of the informed. The reason is that the increased participation of the informed increases competition among them, which erodes their profits and causes prices to correct faster. This implies that liquidity increases efficiency. The result is that, although profits of the informed are higher, their increase is less than the increase in uninformed trading. Therefore, the losses of the uninformed traders to the informed are reduced when measured per transaction. The conclusions of Admati and Pfleiderer are validated empirically by Michael J. Barclay et al., *Private Information, Trading Volume, and Stock-Return Variances*, 3 REV. FIN. STUD. 233 (1990). The article compares weekends where the Tokyo Stock Exchange was open on Saturdays with weekends where it was closed. The alternative hypothesis to the Admati and Pfleiderer model, trading noise, was refuted both because the weekly variance did not increase in the longer weeks and because American stocks did not have increased variance if traded in Tokyo on weekends. The fact that stocks listed in multiple exchanges have low volume and return variance on their secondary exchanges helps prove the theory that all traders will congregate on markets of great liquidity. Volume is concentrated in the more liquid parent exchange where the stock is principally traded. Informed traders also avoid foreign exchanges, resulting in a slowing of price adjustments to new information, thereby lowering efficiency. Although these observations do not verify the principle that decreased efficiency of foreign markets is due to reduced uninformed trading, they do correlate efficiency with volume and liquidity.

24. Albert S. Kyle, *Continuous Auctions and Insider Trading*, 53 ECONOMETRICA 1315 (1985). My interpretation of Kyle's work as showing that time pressure ferrets out information from informed traders may be unconventional. Kyle's article claims to show that insider trading is not undesirable because prices will be corrected by the insider by the end of trading. A permanent end to trading, however, is a rare event in the stock market, only exhibited in delistings. If we accept that public announcement of the information also eliminates further profits by insiders, then announcements may equal Kyle's end of trading. I have countered Kyle's conclusion regarding insider trading regulation by arguing that the relevant measure to decide whether to prohibit insider trading is the aggregate profits of informed traders. Prohibiting insider trading may reduce costs, leading to greater market liquidity at the cost of little reduction in efficiency. Nicholas L. Georgakopoulos, *Insider Trading as a Transactional Cost: A Market Microstructure Justification and Optimization of Insider Trading Regulation*, 26 CONN. L. REV. 1 (1993).

resentations. Only a fraction of informed traders need to believe it for them to face significant competition and trade aggressively. Only some risk aversion by nonbelieving informed traders is enough to keep them from completely resisting the new price movement. Only some time pressure for the informed traders who believe the misrepresentation to rush to take advantage of it. But while it appears unlikely that the disbelievers will completely quash the believers' effect on price, the liquidity of each security determines the likely number of informed traders. The greater the liquidity, the larger their number and the more likely that just persuading a fraction of them will create competitive pressure.

Notice that the courts applying the fraud-on-the-market presumption of reliance have been sensitive to similar concerns. If the market is not liquid (and, hence, not efficient), courts have refused to apply the presumption.[25] On the other hand, if informed traders are persuaded that the misrepresentation is not true, the presumption of reliance may be rebutted.[26]

The analysis of the effect of a misrepresentation in the markets for real and financial goods lays the foundation for their comparison. Stricter securities fraud rules would be justified if the securities markets created stronger verification incentives (provided that verification incentives are as undesirable in financial markets as in real markets). The next paragraphs argue that misrepresentations in financial markets tend to create stronger verification incentives than misrepresentations in real markets. The issue of the undesirability of fraud in financial markets is the object of Part IID.

False statements in markets for real goods are less detrimental than in markets for financial goods for the following reasons: (1) False statements influence the price of real goods for a shorter time, only when their recipients participate in the market. The prices of financial goods are influenced continuously until the false statements are corrected. (2) The influence of false statements on the price of real goods will be smaller than the change in value that the misrepresentation implies. There are few safeguards to prevent the price of financial

25. *See, e.g.*, Freeman v. Laventhol & Horwath, 915 F.2d 193, 199 (6th Cir. 1990) (holding the market for municipal bonds not efficient enough for statements to be reflected in price, so the fraud-on-the-market presumption of reliance is rebutted).

26. *See, e.g.*, *In re* Donald J. Trump Casino Sec. Litig., 7 F.3d 357, 371-73 (3d Cir. 1993), *cert. denied sub nom.* Gollomp v. Trump, 114 S. Ct. 1219 (1994) (concluding other cautionary statements in offering sufficiently warned investors of risk so that no liability arose for some omissions); Roots Partnership v. Lands' End, Inc., 965 F.2d 1411, 1420 (7th Cir. 1992) (finding inaccurate statements by Land's End of its performance did not create liability when the market knew the actual results); *In re* Apple Computer Sec. Litig., 886 F.2d 1109, 1115 (9th Cir. 1989), *cert. denied sub nom.* Schneider v. Apple Computer, Inc., 496 U.S. 943 (1990) (despite Apple's misrepresentations, the press had credibly informed investors about the failure of new products).

goods from reflecting the entire change in value that the misrepresentation suggests. (3) The misrepresentation's influence on a real good is usually local and draws only local attention and verification efforts, while financial misrepresentations receive global attention and verification attempts. (4) Misrepresentations about financial goods should be expected to be more frequent than misrepresentations about real goods. (5) Verification costs are smaller in the case of real goods.

1. THE TEMPORARY NATURE OF DECEIT'S INTERFERENCE WITH REAL GOODS' PRICES

The false prices that misrepresentations create in real goods are corrected as soon as the deceived participants leave the market. The reason lies in the way they influence prices. The deceived party influences price through his contribution to demand or supply. As soon as the deceived party leaves, the price should return to its uninfluenced level. By contrast, financial goods' prices change by the information itself, meaning that once prices are influenced, more than the simple absence of the deceived party is necessary for price correction.

According to economic theory, the price of real goods is associated with the concept of clearing of the market. Prices will have to be set so that everyone who would buy or sell at that price has done so.[27] Clearing, however, is not well defined in practical terms. For instance, does the market for groceries clear every evening when the grocery store closes, or after every transaction when a customer walks away? Or does the market clear only when the season's produce is sold out? To the extent these questions can be answered, the answers will have caveats connecting each time period with the next: The grocer refuses to lower prices to sell more to the current customer because she knows she can sell at higher prices to subsequent customers. The grocer also feels little pressure to lower prices to sell all her produce before the end of the day. She knows that at little cost she can store the produce and sell it the next day. Even at the end of the season, for a low-enough price, produce will be frozen. Prices will not drop below that level.

To see how the influence of deceit depends on the presence of the deceived party in the market, imagine a good that is too costly to carry across time the way the grocer did. Markets must clear independently at the end of each period. Imagine, also, that the good bought is useful for

27. Those who have not bought or sold have not done so because the price is too high to buy or too low to produce and sell. This supply/demand analysis is frequently used in economics textbooks to show that price regulation causes the market not to clear, in which case excess supply or demand exists. *See, e.g.*, WILLIAM J. BAUMOL & ALAN S. BLINDER, ECONOMICS: PRINCIPLES AND POLICY 62-64 (3d ed. 1985); PAUL A. SAMUELSON & WILLIAM D. NORDHAUS, ECONOMICS 393-94 (12th ed. 1985).

three periods, while three periods are also necessary for its production. A buyer of this good is likely not to return to the market for two periods after a purchase. Deceiving one buyer may influence price in the current period, but it will not influence prices in the following two. Consider the earlier example of nine buyers and sellers. The shift in the demand curve only occurs in the period when the deceived buyers participate in the market.

Example of Failure to Equalize Prices due to Costly Carrying: Consider a good which lasts for three periods and assume the supply and demand of the good in each period is identical to that of the nine buyers and sellers example, above. If two buyers have been deceived in period one, we now assume they will return in periods four, seven, and so on. The result is a price of $6 in period one with the misrepresentation, while the price was $5 before.

Assume that carrying the good from one period to the next costs $2 per unit. Since the price in the periods affected by deceit will be $6, and will be $5 at other times, carrying is not profitable and will not occur. Therefore, the price differential across periods will persist. The price in periods two and three will be $5, while during period four it will return to $6.

The example illustrates the temporary influence of deceit on prices. Its temporary nature, however, is limited by the degree of separation between periods, that is, the cost of carrying goods to subsequent periods. The speed with which the deceived party discovers the truth may also reduce the duration of deceit's influence on prices. If I am told that an elixir will increase my strength within a month, the falsity of this statement will be obvious one month later. My disillusionment will eliminate my contribution to the shift in the demand curve.

Neither of these two effects are present in the securities markets. Not only does carrying securities across trading periods have negligible cost (since securities need no costly storage), but frequently the listener is not able to establish a statement's truth or falsity.[28] It is impossible to

28. The problem is most acute for "forward-looking" information about a firm's future prospects, the most important type of information for determining the price of its securities. Information about the firm's past performance is practically irrelevant for its valuation. Investments are made for future returns. Information about future performance determines the price at which investments are desirable. The uncertainty associated with estimating future performance effectively prohibits management from predicting the firm's performance. Any such prediction runs the risk of securities fraud liability. Given this problem, and acknowledging that forward-looking information is most important for accurate pricing, the SEC has tried to encourage predictions by shielding them from liability in several ways, and more such efforts are part of the current congressional litigation reform effort. For example, SEC Rule 175, 17 C.F.R. § 230.175 (1994) provides a safe harbor for forward-looking statements by immunizing their makers from liability if they are in good faith. *See* Safe Harbor Rule for Projections, Securities

distinguish an accurately priced security from an erroneously priced security. The accuracy of the price depends on the accurate calculation of the probability with which each different future price will materialize. Even after the fact, however, one cannot know whether the probabilities were right. The outcome that materialized is irrelevant information with regard to the probability that this outcome would materialize, which is the information that matters for accurate pricing.

Example of the Indistinguishability between Accurately Priced Securities Realizing Unexpectedly Good Results and Underpriced Securities: XYZ Corporation states that it will be worth $100 per share next year, with an 80% probability. In the unlikely event that a research project develops favorably—a 10% probability—it will be worth $150 per share. In the unlikely event that XYZ incurs an environmental liability, also a 10% probability, it will be worth $50 per share. If these statements are correct, the risk-neutral valuation of XYZ is the present value of $100 in one year. A year goes by and the price is at $150. This information is irrelevant to the accuracy of the probability estimates in last year's statement.

This inherent unverifiability of statements about financial goods aggravates the permanent effect of financial misrepresentations. If reexamining past statements' accuracy tends to be a vain pursuit, then market participants may fail to discover the falsity of some falsifiable misrepresentations.

In sum, misrepresentations about real goods should influence their prices for a shorter time than misrepresentations about financial goods for two reasons: the influence on prices depends on the deceived party's presence in the market and the statement's truth is usually ascertainable quickly.

2. THE SMALL PRICE IMPACT OF DECEIT COMPARED TO SECURITIES FRAUD

We saw in the example illustrating the movement of the demand curve caused by a lie, that the price of real goods did not change as much as the change in value implied by a deceptive statement. There

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Act, Release No. 6084 [1979 Transfer Binder] Fed. Sec. L. Rep. CCCH) ¶ 82117 (June 25, 1979). The treatment of appraisals is analogous. Appraisals are uncertain because they concern assets that have not yet been liquidated. As with predictions, professionals are afraid to make appraisals for fear of incurring liability. The SEC has reduced the likelihood that appraisals made in good faith will give rise to liability by removing them from the note to SEC Rule 14a-9, which listed them as examples of misleading statements. *See also* Adoption of Amendments to Proxy Rules, Exchange Act, Release No. 5276 [1956 Transfer Binder] Fed. Sec. L. Rep. (CCH) ¶ 76,380 (Jan. 17, 1956). The commission's efforts, however, do not solve the problem of investors trying to verify the valuation of securities.

are two reasons for the small effect of misrepresentations on the prices of real goods. First, a misrepresentation rarely influences all potential buyers. Therefore the demand curve shifts less than the effect of the misrepresentation. Furthermore, the rise in prices will usually induce an increase in supply, which would mitigate the effect of the misrepresentation.

President Abraham Lincoln explained, in lay terms, why only a partial movement of the demand curve is likely in response to a misrepresentation: "you can't fool all the people all of the time."[29] A misrepresentation usually will not influence all potential buyers of a good. Indeed, it is hard to specify what we mean by a complete shift of the demand curve. If a misrepresentation persuades all buyers that the goods are worth $7, its effect on the demand curve of our example of nine buyers and sellers is not a parallel shift but a rotation: the curve will pivot counterclockwise to become horizontal at the $7 level. A parallel shift is envisioned in an unlikely case: a misrepresentation that the good performs a valuable function in addition to the ones it already performs, and that this additional function is worth $2 to each buyer. Only then will each buyer value the good at $2 more than before the misrepresentation, with the effect of a parallel shift up of the demand curve by $2.

Securities markets provide the opposite environment, one in which local and national borders are crossed at little, if any, cost, one in which securities can be held for the long term at no cost. The profound internationalization of securities markets is proof of this lack of borders.[30] The additional fact that a central clearing corporation holds all securities in most exchanges eliminates any storage cost.[31] Another fundamental difference between securities and real goods, the lack of diminishing returns, dramatically influences the capacity of small, misinformed groups of buyers or sellers to influence prices. Since buying more units of the financial good, i.e., more shares, does not make additional ones any less desirable, even small groups who think a security is undervalued have an incentive to buy as much of it as they can and exert great buying pressure on prices. This stands in stark contrast to the situation

29. *Lincoln to a Caller at the White House*, from Alexander K. McClure, Lincoln's Yarns and Stories, *in* JOHN BARTLETT, FAMILIAR QUOTATIONS 457 (Christopher Marley ed., 11th ed. 1946).

30. *See, e.g.*, Richard P. Bernard, *International Linkages Between Securities Markets: "A Ring of Dinosaurs Joining Hands and Dancing Together"?*, 1987 COLUM. BUS. L. REV. 321 (discussing ways in which the internationalization of securities trading is already implemented—most notably through American brokerage clients' ability to trade many non-U.S. stocks in U.S. exchanges through American Depository Receipts—and barriers to further unification).

31. *See, e.g.*, Egon Guttman, *Federal Regulation of Transfer Agents*, 34 AM. U. L. REV. 281 (1985). The regulation of clearing houses and transfer agents is controlled by Securities Exchange Act of 1934 § 17A, 15 U.S.C. § 78q-1 (1994) and the SEC rules promulgated thereunder.

with real goods, where each buyer can use only a limited amount of the good due to diminishing returns; and therefore, exerts limited pressure on prices. Even if many potential buyers were convinced that a real good was worth more than its price, each would buy only a few units.

Even when all buyers of the real good are persuaded by the misrepresentation and the demand curve shifts by the entire amount of the misrepresentation, prices will rarely change as much. The reason lies in the production increase that usually follows a price increase. This increase in production will usually depress prices to counter the inflationary effect of the misrepresentation. Thus, the increased supply mitigates the full effect of the misrepresentation on demand.

In economic theory, this point is illustrated by the upward (positive) slope of the supply curve. It represents that an increase in prices leads to an increase in the quantity supplied. The downward (negative) slope of the demand curve shows that prices fall in response to more supply. Therefore, the mitigating effect of supply increases depends on the slope of the supply and the demand curves.[32] It is a special case when a horizontal supply curve meets a horizontal demand curve. This phenomenon is practically unique to the securities markets.

By contrast, financial goods are not subject to sloping supply or demand curves.[33] A misrepresentation may impact price fully if its disbelievers are too few, or too risk averse.[34]

3. LOCAL VERSUS UNIVERSAL ATTENTION TO MISREPRESENTATIONS

An additional difference between markets for real and financial goods is their size. Financial markets are international, whereas markets for real goods are usually local. A misrepresentation by a Connecticut

32. A more horizontal supply curve would lead to a smaller price change in response to the movement of the demand curve (provided it slopes down). A horizontal supply curve means sellers have unlimited production ability at the current price. At the opposite extreme, a more vertical supply curve would fully translate any movement of the demand curve to a change in prices. A vertical supply curve means producers are unable to increase production in the face of higher prices.

33. Recently, legal and economic scholars have argued that the premise of horizontal supply and demand curves for financial goods may not hold. The evidence offered to support sloping demand curves is the premium that is offered for takeovers or the premium that must be paid to trade large blocks of stock as compared to small blocks. *See* Andrei Schleifer, *Do Demand Curves for Stocks Slope Down?*, 41 J. FIN. 579, 579 (1986). This is different from arguing that the sloping curves do not apply at all to financial goods. Takeovers involve financial goods that temporarily take on characteristics of real goods. In a takeover, the buyer does not look for an investment opportunity but for the business itself. The buyer is looking for control, not return. The premium that is paid by block traders is also distinguishable. In this case, price changes only for the immediate term. Block traders pay a premium in order to trade immediately. Because they are in a hurry they cannot break up their order into small trades. That implies they have information that must be offset by a price advantage for other market participants.

34. *See supra* text accompanying notes 24-25.

snowblower manufacturer with stock traded on the New York Stock Exchange is as relevant in California or Germany as it is in Connecticut. German and American investors are equally interested in the firm's valuation because they can all trade shares in the corporation at equal cost. By contrast, a misrepresentation about an impending snowstorm will only influence the demand, and price, of snow-removal equipment in the affected area.

The source of the difference, again, is carrying costs. Real goods must be moved to the place where they will perform their service and this carrying cost is significant. Financial goods, by contrast, are traded in organized transfer and clearing systems, which eliminate the need to physically deliver the certificates underlying the securities.[35] When an investor buys a security, regardless of his location, a simple entry in the books of the clearing corporation will transfer ownership of the security. Contrast this to the purchaser of snow-removal equipment. The purchaser must pay to transport the equipment before he can benefit from its ownership. A misrepresentation about a snowstorm may increase demand for snowblowers in Hartford, allowing dealers to maximize profits, but Boston and Albany snowblower dealers cannot step in without cost to satisfy the unexpected demand. They must absorb the cost of moving their inventory before selling it. They will not carry their snowblowers to Hartford unless the Hartford price is higher than their local price plus carrying costs. If additional snowblowers arrive in Hartford, they will alleviate the effect of the misrepresentation by increasing supply and decreasing prices. The carrying cost sets how close prices in Hartford can be to Boston and Albany prices. The difference in snowblower prices between Hartford and the other markets cannot be profitably reduced below the carrying cost.

The global reach of financial misrepresentations means that the incentive to avoid them is global. All investors want to know the truth about the security they buy. By contrast, a snowblower buyer in Colorado is indifferent to misrepresentations that influence snowblower prices in the northeastern United States, and has no incentive to verify such statements.

The lesson for the law of deceit is that fear of misrepresentations in financial markets will induce more verification than in markets for real goods. Distrust in statements about a security will induce verification around the world. Distrust in statements about the need for snowblowers leads to verification by local buyers only. Since verification is wasteful, the misrepresentation that produces less of it is comparatively benign and the law should treat it more leniently.

35. *See* Guttman, *supra* note 31.

4. THE GREATER FREQUENCY OF FINANCIAL MISREPRESENTATIONS

The incentive to verify is also influenced by the expected frequency of misrepresentations. If information is false only 1% of the time, and in such a case it causes a loss of $100, the incentive to verify is one dollar strong. If verification costs more than $1, a risk-neutral market participant will not verify. If information may be wrong half the time, the risk-neutral individual would spend up to $50 to separate a lie from the truth. Risk-aversion accentuates the importance of frequency.[36]

The question of whether misrepresentations should be expected with greater frequency in real or financial markets is not subject to empirical verification, because of the differences in regulating misrepresentations in both markets. Consequently, the frequency that results from current incentives is irrelevant. We must imagine identical rules in both financial and real misrepresentations. It is not possible to go back in time and compare real and financial markets before securities laws were developed. Furthermore, such a comparison would be inconclusive since the securities markets have evolved dramatically in the meanwhile. Attempts to empirically judge the reaction to the passage of federal securities laws remain controversial.[37] The only available

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36. Compare two lotteries, one paying $1,001 with a 99% probability or $901 with a 1% probability to one paying $1,050 or $950 with a 50% probability each. While a risk-neutral investor would consider the two equivalent, a risk-averse one would prefer the former lottery.

Proof: Assume individuals' risk aversion takes the form of a utility of wealth function U(w) that has constant relative risk aversion, $U(w)=w^{(1-a)}/(1-a)$, where w is wealth, and a is the coefficient of risk aversion. *See generally*, Kenneth J. Arrow, *The Theory of Risk Aversion, reprinted in* 3 COLLECTED PAPERS OF KENNTH ARROW 147 (1984).

These individuals face a fair gamble which exposes them to a fluctuation of their wealth equal to a fraction n, where $0<n<1$, meaning that the difference between winning and losing is nw, and the gamble is fair in that the expected wealth remains w. The probability of winning or losing, however, changes, as do the consequences of winning or losing. One wins with probability p and the winnings are (1−p)nw, and loses with probability (1−p) and the loss is −pnw, leaving the expected wealth constant regardless of the type of gamble chosen (which is defined by p). Effectively the previous example compared two alternative such gambles, one with p=.99 and one with p=.5, while w=$1,000, and n=.1. Extreme values of p close to 0 or 1 imply gambles where very small changes in wealth are expected with great probability and large changes are very unlikely. Values of p close to .5 imply even gambles, where both outcomes are nearly equally likely and both significantly different than current wealth. This model captures risk aversion through the expected utility of wealth EU, which is $EU(w)=pU(w[1+(1-p)n])+(1-p)U(w[1-pn])$.

The undesirability of giving up an extreme value of p to approach a more even gamble takes the form of the marginal expected utility of a change in p, i.e., dEU/dp. Indeed that is negative and decreasing in risk aversion when p is close to 0 (implying that evening-out the gamble by increasing p is increasingly undesirable as risk aversion increases) and positive and increasing in risk aversion when p is close to 1 (implying that evening out the gamble by decreasing p is increasingly undesirable as risk aversion increases). Please request more explicit analysis from the author.

37. The primary classical opponents of disclosure rules are Professors George Stigler and George Benston. *See generally* George J. Benston, *The Costs and Benefits of Government-Required Disclosure: SEC and FTC Requirements*, *in* CORPORATIONS AT THE CROSSROADS:

approach is to draw inferences from the incentives for misrepresentations that the two markets offer.

Misrepresentations about real goods offer small gains to their maker. The price changes the misrepresentations cause, and hence the profits they generate for misrepresenters, tend to be small, temporary, and local, as we saw in the previous paragraphs. Financial misrepresentations tend to have a larger impact. The larger gains that financial misrepresentations appear to offer, however, are tempered because the issuing corporation does not receive all the gains from higher prices that misrepresentation may cause. Financial misrepresentations occur in a secondary market. Indeed, it is unclear who profits. Insider trading rules bar both shareholders and managers from directly taking advantage of mispricings.[38] Usually the gains are indirect: a buyer inflates the price of his own stock before offering it for the target corporation's stock; higher prices in one's own corporation lead to higher bonuses, stock options, and other forms of compensation tied to performance. Although the benefits are indirect, the size of financial gains from misrepresentations are staggering compared to those available from misrepresentations about real goods.

If the incentives to make financial misrepresentations are stronger, they should be expected with greater frequency than misrepresentations about real goods. If financial misrepresentations are undesirable, the legal system must either increase penalties or increase the probability that financial misrepresentations will be penalized. The fraud-on-the-market presumption of reliance, which allows securities fraud class actions to go forward more easily than deceit class actions, increases the probability that financial misrepresentations will be penalized.[39] An

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GOVERNANCE AND REFORM 37-69 (Debra A. DeMott ed. 1980); George J. Benston, *Required Disclosure and the Stock Market: An Evaluation of the Securities Exchange Act of 1934*, 63 AM. ECON. REV. 132 (1973); George J. Stigler, *Public Regulation of the Securities Markets*, 37 J. BUS. 117 (1964). Representing the opposing school are: Irwin Friend & Edward S. Herman, *Professor Stigler on Securities Regulation: A Further Comment*, 38 J. BUS. 106 (1965); Gregg A. Jarrell, *The Economic Effects of Federal Regulation of the Market for New Security Issues*, 24 J.L. & ECON. 613 (1981); Morris Mendelson, *Economics and the Assessment of Disclosure Requirements*, 1 J. COMP. CORP. L. & SEC. REG. 49 (1978).

38. Two types of rules prohibit insider trading. First, certain trades by defined insiders are blocked by Section 16 of the Securities Exchange Act of 1934. *See* 15 U.S.C. § 78p (1994). Section 16 awards to the corporation any profits that may accrue to an insider from trades that are less than six months apart and also prohibits short-selling the corporation's stock. Second, there are interpretations of the anti-fraud provisions of securities regulations, primarily SEC Rule 10b-5, promulgated under Section 10(b) of the Securities Exchange Act of 1934. *See* 15 U.S.C. § 78j (1994). Those rules can be read to prohibit trading on material nonpublic information that was improperly used or obtained. *See* Georgakopoulos, *supra* note 24, at 8-14, describing the anti-insider trading interpretations of the anti-fraud rules.

39. Similarly, the standard of proof in securities fraud is easier for plaintiffs to meet than the standard for common law deceit. *See* Herman & MacLean v. Huddleston, 459 U.S. 375, 387-88

increased probability of liability leads to deterrence.

5. THE HIGH COST OF VERIFYING FINANCIAL INFORMATION

How costly is it to verify information about real goods? Everyone has verified information in some type of transaction. For example, used car buyers can verify the condition of the complex machine's mechanical operation at any garage for about $35. Home buyers can check the house's mechanical and structural soundness for under $200 by hiring an inspector. Consider these amounts as a percentage of the purchase price. The $35 would be 3.5% of a $1,000 car or approximately 1% of a $3,000 car. A $100 appraisal is 0.1% of a $100,000 house. Verification of a $500,000 house for $150 represents 0.0003% of the purchase price.

Verifying information about securities, however, is prohibitively costly and practically impossible. The numerous examples of financial fraud cases litigated show that the false information could not have been verified without the cooperation of its maker. Consider the example of Equity Funding, an insurance company that overstated its assets. The fraud was exposed by disgruntled ex-employees to Raymond Dirks, a securities analyst. When Dirks tried to bring the information to light, respected newspapers and the S.E.C. ignored him. When he had his clients trade on it, the S.E.C. prosecuted him for insider trading.[40]

Consistent with what the previous sections explained, the effect of the misrepresentation on the price of Equity Funding's stock was full, continuous, and global. The stock traded at the price that fully reflected the misrepresentation. The misrepresentation influenced price for at least three years.[41] Its effect was global. Equity Funding was based in California, while the fraud influenced the price of its stock on the New York Stock Exchange.

Although huge profits were in store for whomever uncovered the misrepresentation, the fraud persisted until Dirks got involved. The costs that Dirks undertook to uncover the misrepresentation were significant. After he received the tip, he left his New York office and went to California, to interview several employees of Equity Funding. Despite the fact that senior management denied wrongdoing, he pursued his efforts for two weeks, until he could corroborate the allegations of fraud.[42]

(1983) (maintaining preponderance of the evidence standard of proof in securities fraud actions while rejecting clear and convincing standard applicable to common law deceit).

40. Dirks v. Securities and Exch. Comm'n, 463 U.S. 646 (1983).

41. The SEC first received information about fraud at Equity Funding in 1971. The discovery led the New York Stock Exchange to suspend trading in Equity Funding on March 27, 1973. *Id.* at 650 & n.3.

42. *Id.* at 649-50.

The example of Equity Funding is striking. Government auditors had reviewed the corporation's books and missed the fraud. How likely was it that anyone would have uncovered the fraud without the help of an insider? This example shows that financial frauds can be prohibitively expensive and nearly impossible to uncover.

To summarize, financial misrepresentations have a larger and longer impact on prices, have a more global audience, are more frequent, and are costlier to verify than misrepresentations about real goods. It should be obvious that financial fraud poses a greater threat than real fraud, and its rules should increase the likelihood that a securities fraud plaintiff succeeds. Nevertheless, the objection could be made that fraud in secondary securities markets does not decrease social welfare, and therefore efforts to curb it are unnecessary. The next section disputes this contention and argues that verification is at least as wasteful in secondary securities markets as it is in markets for real goods.

D. *The Undesirability of Verification Incentives in Financial Markets*

A presumption of reliance that allows securities fraud class actions to go forward where deceit class actions would fail seems to be a perfect answer. But the proponents of laissez-faire securities fraud rules argue that fraud in secondary securities markets is not as undesirable as fraud in real markets, primarily because investors may diversify away the risk of fraud.[43] This Section rebuts that argument. On the one hand, the arbitrage (informed) trading necessary to preserve accurate prices is by nature undiversified, and burdening arbitrageurs with fraud risk reduces their ability to make the market efficient. On the other hand, even diversified (uninformed) trading is subject to the risk of fraud if the resulting mispricings are biased or correlated. When uninformed traders face the risk of fraud, they have incentives either to become informed in order to avoid the risk, or to trade less frequently. Both effects are undesirable because they reduce liquidity. Uninformed traders may also demand higher returns in order to invest in the stock market, in which case firms will face a higher cost of capital.

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43. *See* Mahoney, *supra* note 8, at 639.

> Moreover, the losses associated with lies issuers tell to secondary-market participants are diversifiable risks from the latter's viewpoint. Investors who hold the market portfolio and trade only in response to changes in their income and consumption levels are as likely to make trading gains as trading losses from secondary-market fraud.

Id.

1. MARKET EFFICIENCY DEPENDS ON UNDIVERSIFIED INFORMED TRADING

One of the greatest inroads of financial theory was the discovery that diversification eliminates the risk associated with holding stocks. By holding numerous stocks, investors lose little or no sleep over the performance of any single one. Price changes of one stock are compensated by opposite changes in the price of others.[44] Those who argue that diversified investors also diversify the risk of fraud assume that diversified holdings imply diversified trading. A diversified portfolio can be constructed and liquidated by buying stocks one at a time. Although the popularity of mutual funds allows investors to trade their diversified portfolios, such trading is definitely not the rule. Even if, for the sake of argument, we concede that investors always make diversified trades, the question becomes whose trading corrects erroneous prices and returns the market to its efficient state. The CAPM assumes that arbitrageurs, informed traders, will step in whenever prices are inaccurate and will correct them. By definition, these traders are exposed to the risk of the single security in which they trade. But to understand the definition of informed traders and why they are not diversified, we must return to Market Microstructure, the new financial area that examines the interaction of market participants in greater detail than microeconomics, and its answer to a related puzzle of financial theory, the efficiency paradox.

The efficiency paradox is an outgrowth of the CAPM, which only examines trading motivated by information. In the world of the CAPM, erroneous prices are averted because traders arbitrage them against portfolios with equal risk (beta). The efficiency paradox asks what happens if in such a world market prices are perfectly accurate. The CAPM answer is that there would be no trading since there are no arbitrage opportunities. But lack of trading implies no market, which leads to the paradox that in its most efficient state a market disappears.[45]

Market Microstructure explains that the CAPM oversimplifies the motives for market participation. Granted, some traders are motivated by trading profits, but others use the market as a long-term depository for their savings. Since history shows the stock market offers a return of 6% above bonds, it is desirable for passive long-term investment.[46] These long-term investors are not motivated by information. They buy when they have disposable income, and they sell when they need to dip

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44. *See* BREALEY & MYERS, *supra* note 20.

45. *See also supra* Figure 2.

46. The return of worldwide equities since 1960 averaged 12.7%, while an investor in U.S. bonds would have enjoyed an average return of only 6.83%. *See* HANDBOOK OF MODERN FINANCE 18-21, Table 18.9 (Dennis Logue ed. 1990).

into their savings. Their trading is motivated by decisions to save or consume, not by information.

The presence of uninformed traders averts the efficiency paradox. Even if prices are perfectly accurate, the uninformed still buy and sell. In the very short term their trades move prices and create "noise," the small jagged price movements from trade to trade.[47] By correcting the errors in prices that the uninformed create, informed traders survive and limit noise. When the error in the prices is large enough, it gives rise to profitable informed trading—what the CAPM calls an arbitrage opportunity.

There is no paradox in the interaction of the informed and the uninformed traders. The uninformed, through long-term investment, share in the economic growth that propels the stock market. But this participation is only possible because of the intervention of informed traders whose profits effectively come out of the pockets of the uninformed. From the perspective of the uninformed this is the cost of participating in a market with accurate prices, without pursuing information. This interaction is similar to a contractual arrangement where the uninformed hire the informed to ensure that they trade at accurate prices. The uninformed trade at slightly "noisy" prices, and this compensates the informed for keeping prices accurate.[48]

The effects of financial misrepresentations must be examined in this context. Diversification is obviously not a panacea that eliminates the need for fraud rules. Only the uninformed can trade diversified. The informed traders, by definition, only trade in the securities that have incorrect prices. They cannot diversify themselves against the risk of fraud. The question is how do the informed react to the risk of fraud.

Informed traders must be compensated for losses they incur due to misrepresentations, or they will not service the market and correct prices. Their compensation can come from two sources. First, informed

47. The fact that trades move prices in the short term has been irrefutably proven in countless empirical studies. Those that use Microstructure methods are Jerry Hausman et al., *An Ordered Probit Analysis of Transaction Stock Prices*, 31 J. FIN. ECON. 319, 357 (1992) (noting that "[t]rading a larger quantity [of stock] always yields a larger price impact"), and Roger D. Huang & Hans R. Stoll, *Market Microstructure and Stock Return Predictions*, 7 REV. FIN. STUDIES 179 (1994).

48. *See* Ronald J. Gilson & Reinier H. Kraakman, *The Mechanisms of Market Efficiency*, 70 VA. L. REV. 549, 569-79 (1984); *see also* Reinier H. Kraakman, *Taking Discounts Seriously: The Implications of 'Discounted' Share Prices as an Acquisition Motive*, 88 COLUM. L. REV. 891, 899, 929-30 (1988); Mahoney, *supra* note 8; Jonathan R. Macey et al., *Restrictions on Short Sales: An Analysis of the Uptick Rule and its Role in View of the October 1987 Stock Market Crash*, 74 CORNELL L. REV. 799, 814 (1989); Steve Thel, *Regulation of Manipulation under Section 10(b): Security Prices and the Text of the Securities Act of 1934*, 1988 COLUM. BUS. L. REV. 359, 401 (1988).

traders can reevaluate all securities prices downward, buying only if prices fall to a lower level. Since securities will pay the same dividend, at the lower price the same dividend will provide a greater rate of return. A $1 annual dividend on a $40 stock is a 2.5% annual return. The same dividend is a 5% return if the stock was bought at $20.

This price lowering strategy, however, will increase the payoffs to informed traders only if they hold a security long enough to receive its returns. But informed traders are not long-term holders of securities. They want to get out of their undiversified position as soon as possible. Moreover, informed traders only buy some of the time. Frequently, informed traders sell overvalued securities short.[49] As short-sellers, they do not receive the higher return, but owe it to the investor from whom they borrowed to sell short. The higher returns do not help, but hurt, short-sellers.

The informed traders' alternative is to refrain from correcting small price errors and to wait for larger deviations. If they only buy significantly undervalued securities and only sell significantly overvalued securities, they increase their profit each time they trade. Since they are exposed to fraud in every trade, the increased profit counteracts any loss due to fraud. The following example illustrates the point that fear of inaccurate valuations will lead informed traders to not correct small price deviations.

Example where Correcting Greater Price Errors Compensates Fraud-Related Losses: Informed traders exhibit risk-aversion having a utility-of-wealth function u(w) of the form $u(w) = -1/w$.[50] *They know that*

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49. Short-selling is the selling of stock that the trader has not previously bought. Thus, the trader must borrow the stock, sell it, then buy it back in order to return it. The short-seller bets on a price drop that will allow her to buy back the stock for less than she sold it and therefore profit.

50. The utility-of-wealth function used in this example exhibits constant relative risk aversion, meaning that individuals react the same way to the gamble of increasing or decreasing wealth by a given proportion, regardless of their wealth. Constant absolute risk-aversion would have individuals react identically to gambles for given amounts, regardless of their initial wealth. This obviously does not happen. Disagreement still exists among economists over whether individuals exhibit constant relative risk aversion or declining relative risk aversion. The utility function used in the example has a risk-aversion coefficient of 2, the a of the more general form

$$u(w)=C1\ \frac{w^{1-a}}{1-a}+C2.$$ The constant C1 is 1, and C2 is 0 in the example.

Citations on risk-aversion have been collected in Lawrence Blume & Daniel L. Rubinfeld, *Compensation for Takings: An Economic Analysis*, 72 CAL. L. REV. 569 (1984):

> Support for the view that absolute risk aversion declines with wealth is given by H. RAIFFA, DECISION ANALYSIS: INTRODUCTORY LECTURES ON CHOICE UNDER UNCERTAINTY (1968); Hicks, *Liquidity*, 72 ECON. J. 787 (1962); Pratt, *Risk Aversion in the Small and in the Large*, 32 ECONOMETRICA 122 (1964); Yaari, *Some Remarks on Measures of Risk Aversion and on Their Uses*, 3 J. ECON. THEORY 315 (1969). For a discussion of the evidence concerning relative risk aversion, see Cohn,

the potential for misrepresentations makes their valuations subject to a potential variation of 20%, so that firms they consider worth $100 may be worth $80 or $120 (there is a 50% chance of each error occurring). If they were to gamble their entire wealth on such a trade, they would prefer that there was no possibility that misrepresentations would cause their valuations to be wrong. If they were certain that their valuations were accurate, they would know that after the trade, when prices returned to their accurate level, their terminal wealth w_t would be their initial wealth, w_i, times the inverse of the undervaluation. So if they bought stock at 99% of its value, their terminal wealth would be $w_t = w_i/.99$. If they bought $99 worth of this stock, they would end up with $100 ($99/.99). But their aversion to risk makes them dislike the possibility that they could end up with $80 or $120 despite the fact that their expected wealth, Ew, is equal to their terminal wealth under certainty. Their expected (average) utility E(u) from the trade, under these circumstances, is the average of the utility to which each outcome would lead. Due to risk aversion, this is less than the utility of the average of the two outcomes, u($100). Thus, the expected utility is the sum of [the 50% probability of a decline to 80% of the trader's valuation times the utility of a wealth 80% of the terminal wealth] plus [the 50% probability of the rise to 120% times the utility of 120% of the terminal wealth]. Formally:

$$E(u) = .5\,u(.8\,w_t) + .5\,u(1.2\,w_t)$$

$$E(u) = -\frac{.5}{.8w_t} - \frac{.5}{1.2w_t}, \text{ or, } E(u) = -\frac{1.041.}{w_t}$$

Compare this to the utility of remaining with the initial wealth by not trading:

$$u(w_i) = -\frac{1}{w_i}.$$

Trading reduces utility by as much as a 4.1% reduction in wealth. In order to be persuaded to trade, the expected utility of wealth must be greater than the utility of current wealth. How much smaller must initial wealth be to make trading worthwhile? In other words, at what percentage of terminal wealth must current wealth be, or at what

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Lewellen, Lease & Schlarbaum, *Individual Investor Risk Aversion and Investment Portfolio Composition*, 30 J. FIN. 605 (1975); Friend & Blume, *The Demand for Risky Assets*, 65 AM. ECON. REV. 900 (1975); Grossman & Shiller, *The Determinants of the Variability of Stock Market Prices*, 71 AM. ECON. REV. 222 (1981).

Id. at 604 n.99.

percentage x of their inaccurate valuation must traders buy, to compensate for their risk-aversion? This is the solution to

$u(x\ w_i)=.5\ u(.8\ w_i) + .5\ u(1.2\ w_i)$

This implies x=.96, which means that the risk-averse traders must buy shares at less than 96% of their valuation to compensate for the risk of misrepresentations.[51]

THE DISCOUNT RISK-AVERSE INFORMED TRADERS REQUIRE IN ORDER TO TRADE

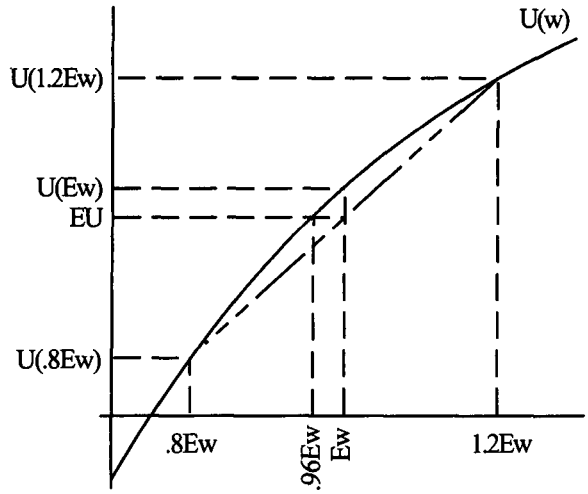

Figure 5: The graphic representation of risk-aversion shows how a utility-of-wealth function with upward but declining slope transforms what appears to be a fair gamble into a reduction in wealth. Our trader puts her wealth on the line because she has appraised a stock to be worth 100% of its value. If she buys that stock at a discount, the expected value of her holdings is $100, Ew, despite the fact that she makes a 20% error. If her valuation were accurate she would reap all the utility of her expected wealth, U(Ew), but the error reduces her expected utility, EU, to the average of the utility she would derive from a 20% drop in the stock price, U(.8 Ew), and the utility she would derive from a 20% increase in the stock, U(1.2 Ew). Because this expected utility is less than the utility of the stock's expected value, she will only buy if the discount is sufficient to cover the difference. Here that would be if the stock is below 96% of its expected value, .96 Ew. This value at which a risk-averse actor is indifferent between the uncertain outcome and the certain but lesser wealth is often referred to as the "certainty equivalent" of the uncertain outcome. This figure uses the utility function of the above example, U(w)=−1/w.

The point of the above example is that informed traders can overcome risk aversion not by lower prices but by more incorrect prices. In

51. More formally, if a discount of D is expected with probability P and a premium of R is expected with probability Q, while with probability 1−(P+Q) the valuation is accurate, then the discount x at which shares will be bought is given by the solution to:

$u(x\ w)=p\ u(\ (1-d)\ w) + q\ u(\ (1+r)\ w) + (1-p-q)\ u(w), \Rightarrow$

$x=(d-r+dr-1)/\ [(1-p+(1-p-q)r)d-(1+q)r-1]$, or if $R=D$ and $Q=P$, then

$x=(d^2-1)/[(1-2p)d^2-1]$. Both versions of x are positive and smaller than 1 for the relevant values of the parameters (remember that $2p\leq 1$ or $p+q\leq 1$).

the example, risk-averse traders would only trade if prices deviated by more than 4% from their accurate valuation. This 4% is the profit margin the informed traders require to trade if misrepresentations influence their valuations by 20%. If valuations are also inaccurate for other reasons, which they must be since they are based on predictions, then risk is greater and informed traders will require a greater margin of error to trade. A wide margin of error in prices means that prices will deviate significantly from their accurate level, eroding the efficiency of the stock market. But this undesirable effect on informed traders is not the end of the ills that misrepresentations cause. They also undesirably affect uninformed traders, in spite of their diversification.

2. THE DANGER OF MISREPRESENTATIONS IS UNDESIRABLE EVEN FOR DIVERSIFIED UNINFORMED TRADERS

So far the rebuttal of the laissez-faire-securities-fraud arguments accepted the assumption that diversified trading eliminates the risk of misrepresentations. The premise of this assumption, however, is that misrepresentations induce price errors that on average cancel each other out (i.e., have a mean of zero) and are independent, meaning that inflation of one security does not make inflation of other securities more likely. But there is no empirical support for any of the conditions that laissez-faire-securities-fraud scholars assume exist. Errors caused by misrepresentations may be biased and have means different than zero. There is evidence pointing in this direction.[52]

The existence of mean-zero price errors, positive and negative errors that cancel out, and of independence between errors is necessary for diversification to eliminate the effects of misrepresentations. If misrepresentations raise or lower prices on average, then uninformed traders averse to risk will not trade, lest they buy inflated stocks or sell undervalued stocks. Even if misrepresentation-induced errors were, on average, zero, diversified traders would still fear misrepresentations if their effects on stock prices were not independent. They would no longer count on the inflations to offset the undervaluations. A lack of independence means that even if over time overvaluations cancel out undervaluations, at the time they are trading it is likely that more stocks will either be overvalued or undervalued. Cycles of euphorias and crashes are

52. Indirect evidence that deceptive overvaluations tend to be more prevalent appears in Jennifer Francis et al, *Shareholder Litigation and Corporate Disclosures*, 32 J. ACCT. RES. 137 (1994). For evidence by implication of correlation in price changes, see Tim Loughran & Jay Ritter, *The New Issues Puzzle*, 50 J. FIN. 23 (1995) (stating that IPOs tend to precede poor performance of either the entire market or the segment corresponding to the IPO firm; this strongly implies that there is some widespread overvaluation when IPOs take place in great numbers and some undervaluation when they do not).

manifestations of this interdependence.[53] Again, risk-averse traders fear buying when most stocks are overpriced or selling when most are underpriced.

Uninformed traders can react in three ways to the fear of misrepresentations. They can trade less frequently, filter out stocks influenced by misrepresentations from their trades, or demand a higher return to hold the securities. All three reactions, alone or in combination, are undesirable because they erode the liquidity and efficiency of the market.

a. Compensating the Uninformed Through Longer Holding Periods: Illiquidity That Leads to Inefficiency

Since uninformed traders are exposed to losses from fraud only when they trade, a simple way to reduce this undesirable exposure is to trade less. Traders achieve this by lengthening their holding periods.

Example of Canceling the Cost of Fraud by Lengthening Holding Periods:[54] *Uninformed traders are risk averse, and prefer some reduction in wealth to trading due to their fear of fraud. Assume that uninformed traders equate trading to a 1% reduction in wealth. Suppose, however, that by investing their wealth in the stock market they enjoy an 11% return, which is greater than their other investment alternatives. If they place all their wealth in the stock market for one year, there will be two 1% reductions, one for buying and one for selling. But they will enjoy an 11% increase in wealth, leaving them approximately 9% better off. If uninformed traders were to wait two years before liquidating, however, they would enjoy a 22% increase in wealth with the same 2%*

53. The possibility that false prices exist according to a discounted present value model is disconcerting to economists who think that traders who make the mistake of buying overvalued assets soon go bankrupt. However, academics recently have formulated theories under which false prices may exist. The economic literature calls irrational traders "noise traders" and market euphorias that support high prices "bubbles." *See, e.g.*, J. Bradford De Long et al., *The Survival of Noise Traders in Financial Markets*, 64 J. BUS. 1 (1991); J. Bradford De Long et al., *Noise Trader Risk in Financial Markets*, 98 J. POL. ECON. 703 (1990). De Long analyzes a model postulating that the existence of noise traders that "follow the crowd" may induce rational traders to anticipate such trends, enter in their beginning, and initiate them in J. Bradford De Long et al., *Positive Feedback Investment Strategies and Destabilizing Rational Speculation*, 45 J. FIN. 379, 380-83 (1990). Further, De Long and Shleifer found evidence supporting the existence of bubbles in J. BRADFORD DE LONG & ANDREI SHLEIFER, THE BUBBLE OF 1929: EVIDENCE FROM CLOSED-END FUNDS (National Bureau of Economic Research Working Paper No. 3523, 1990). The author compared the ratio of the closed-end fund premium before the two crashes, 1929 and 1987, to its historical level. In 1929, the fund premiums averaged 60%. From this the authors suggest a bubble larger than 30% existed before the crash. *Id.* The authors' data does not cover 1987, but in 1985, as well as in 1969-70, closed-end funds were selling at premiums.

54. For a thorough and formal model of the influence of transaction costs on the length of holding period and the rate of return, see Yakov Amihud & Haim Mendelson, *Asset Pricing and the Bid-Ask Spread*, 17 J. FIN. ECON. 223 (1986).

fraud transaction cost. If investors need a 10% annual return, after costs, to put their funds in the market, they will only invest in the market if they can leave the funds there for two years. A further increase in the risk of fraud to 2% per trade, could be overcome without increasing market return, but by lengthening the holding period to four years. Over that time investors' wealth would increase 44%, while their two trades would reduce wealth by 4%, leaving the same 10% annual return after costs.[55]

Just because longer holding periods can compensate uninformed traders for fraud costs does not eliminate the undesirability of fraud. The harm behind longer holding periods takes us back into Market Microstructure and three key findings: (i) trading volume increases market liquidity, (ii) liquidity lowers the costs for informed traders and, therefore, increases their number and their trading, and (iii) more informed trading leads to more accurate prices and more efficient markets. Before examining this chain, which shows that a decrease in trading threatens efficiency, a better grasp on the concept of market liquidity is necessary.

Liquidity is the market's capacity to satisfy trading requests. When an investor wants to buy or sell, the market must provide a counterpart. Liquidity means that this counterpart will be easily found. The opposite state is illiquidity. The difficulty to fulfill trading requests ("orders") that illiquidity implies has two aspects, one temporal and one regarding price. The temporal aspect of the difficulty in finding a counterpart is delay. The investor may submit his order but may have to wait a long time to find a counterpart. The price aspect of this difficulty means that the trader will have to offer a price concession to attract a counterpart. The investor who wants to buy may be unable to buy at the current market price and may have to offer a premium price before someone agrees to trade with him.[56] Time and price are substitutes in this setting.

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55. For simplicity of computation, I assume no compounding of interest, and take the cost of fraud in both transactions to be a proportion of the initial wealth. In fact the cost of fraud in the liquidating transaction should be a proportion of the wealth after it has increased. A simple adjustment would show the same conclusions come across even more strongly after annual compounding. If the cost of fraud is equal to a reduction of wealth by a proportion f, so that the trader's wealth after fraud costs is $w-fw = w(1-f)$, where w is current wealth, the return after fraud costs r^* is $r^*=[(1+r)^n-f(1+r)^n-f]^{(1/n)}-1$, where r is the return of the market before costs and n is the length of the investment period in years. This is the relevant solution for r^* of $w(1+r^*)^n=w(1+r)^n(1-f)-wf$, where w is the initial wealth. If, according to the hypothesis, the market return is 11% (r=.11) and fraud costs are 2% (f=.02), an after-costs return of 10 percent ($r^*>.10$) is achieved if the investor holds for longer than n=3.76 years. If the fraud costs are 1% then an after costs return of over 10% is achieved in 2.02 years.

56. The most obvious expression of this liquidity is that large, block trades cause price moves. This puzzled economists before the advent of Microstructure. *See, e.g.*, JAMES H. LORIE ET AL., THE STOCK MARKET, THEORIES AND EVIDENCE 69 (2d ed. 1985) (citing empirical studies

The trader who is in a hurry will have to purchase at a premium. But the investor can avoid buying at a premium if he is willing to wait.

The organization of stock exchanges reflects these features of liquidity. They are most obvious in exchanges using market-makers, specialists who have an obligation to trade at the prices and up to the quantities they announce with any investor. For example, on January 4, 1993, at 10:00 am, the IBM specialist was willing to buy 800 shares at $51¼ ("Bid") and to sell 3,300 shares at $51½ ("Ask").[57] Because the specialist must always stand ready to buy and to sell, he cannot do so for an unlimited number of shares or he would fall prey to informed traders.

Exchanges with specialists make it easy to observe liquidity. It shows in the specialist's willingness to trade. A willing specialist represents a liquid market. He would fulfill larger trades with smaller price concessions than an unwilling specialist, who corresponding to an illiquid market, would only trade small quantities while rapidly readjusting prices to the traders' disadvantage.

Compare in the following hypothetical trading scenarios how a specialist would behave in liquid and illiquid markets.

Liquid Market Example: Trader approaches the specialist to buy 1,000 shares at $100 per share. The specialist, having announced an Ask of $100 per share for 1,000 shares, accepts but adjusts his Ask to $100½ for 500 shares.

Illiquid Market Example: The trader approaches the specialist for an identical trade. The Ask is again at $100 per share, but for only 500 shares. After Trader buys 500 shares the specialist raises the Ask to 100½ and for only 300 shares. After Trader buys another 300 shares, the specialist changes the Ask again to $101 for 300 shares. Trader finally completes the purchase of 1,000 shares, but in the illiquid market it took three trades and an average price of $100.35. Due to the illiquidity, Trader was not only delayed but was also forced to make a price concession.

The undesirability of fraud depends on the conclusion that less trad-

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confirming an effect of large transactions on prices, all of which focused on the New York Stock Exchange, by far the most liquid stock market). A study by Larry Y. Dann in particular found that large trades move prices, but prices return within fifteen minutes to a level that does not allow profits after transaction costs. *See* Larry Y. Dann et al., *Trading Rules, Large Blocks and The Speed of Adjustment*, 4 J. FIN. ECON. 3 (1977). The same effect is today considered a natural component of liquidity. More recent empirical work tries to find how adversely the market reacts to trades of all sizes. *See, e.g.*, Hausman et al., *supra* note 47; Huang & Stoll, *supra* note 47.

57. Data from the New York Stock Exchange Trade And Quotation database on CD-ROM, Jan. 1994. For the regulation of the specialists, see Nicholas Wolfson & Thomas A. Russo, *The Stock Exchange Specialist: An Economic and Legal Analysis*, 1970 DUKE L.J. 707; Dale A. Oesterle et al., *The New York Stock Exchange and Its Out Moded Specialist System: Can the Exchange Innovate to Survive?*, 17 J. CORP. L. 223 (1992).

ing will lead to less liquidity. The idea that liquidity depends on trading volume is generally accepted,[58] and has been empirically proven.[59] The legal system must not create incentives to trade infrequently because this will erode liquidity, a valuable attribute of financial markets. Lack of liquidity means that traders must pay a premium to trade, in money or time. This premium is a transaction cost, a drag-force on the economy.

As the above example shows, if prices are equally depressed in liquid and illiquid markets, the illiquid market may not offer informed traders enough profits to entice them to trade and correct prices. To determine the difference in the characteristics of both markets, we must identify how liquidity influences the strategy of informed traders. Informed traders can overcome the problem of illiquidity not allowing large trades without eliminating price errors in two ways. First, the informed traders may require larger deviations from accuracy before attempting to correct prices. Alternatively, they can compromise on the temporal aspect of illiquidity and not require speedy execution of their trades. In either case, the market's efficiency is compromised. Prices are less accurate and corrections are delayed.

The theory and evidence of Market Microstructure,[60] points to an additional, but less obvious, consequence of illiquidity: as liquidity decreases due to less uninformed trading, the profits of informed traders decrease at a rate slower than the reduction of uninformed trading. As a result, when the profits of informed traders are computed per uninformed trade, they increase compared to those in the liquid market. For example, if in the liquid market the uninformed traded 200,000 times over a one month period, the informed would have a profit of $20,000 from their monthly trading, or 10¢ per uninformed trade. If for any reason, such as increased fear of fraud, the uninformed halve their trading to 100,000 trades per month, the profits of the informed will be reduced less than proportionately, say to $15,000 per month, or 15¢ per unin-

58. *See, e.g.*, Self-Regulatory Organizations, Exchange Act Release No. 21,324, 49 Fed. Reg. 37,200 (Sept. 21, 1984) (announcing that "BSE [Boston Stock Exchange] shall bill the Montreal member for standard trade recording and value charges. . . . Linkage will enable the BSE to attract additional order flow which in turn enhances the depth and liquidity of the markets of BSE specialists."); Jonathan Macey & Hideki Kanda, *The Stock Exchange As A Firm: The Emergence Of Close Substitutes For The New York And Tokyo Stock Exchanges*, 75 CORNELL L. REV. 1007, 1015 (1990) (noting that "the more frequently trading opportunities are generated by a firm, the more liquid we would expect the firm's shares to be.").

59. Hausman et al., *supra* note 47; Huang & Stoll, *supra* note 47.

60. The theory is set out in the theoretical model of Admati & Pfleiderer, *supra* note 23. Their conclusions are validated empirically by Barclay et al., *supra* note 23. The specific relationship of increased liquidity leading to profits of informed traders greater in aggregate but reduced if expressed perunim formed transaction is supported by the evidence of Nejet Seyhun, *Insiders' Profits, Lost of Trading, and Market Efficienty*, 16 J. FIN. ECON. 189 (1986).

formed trade. Thus, the ratio of informed profits to uninformed trades increases.

But the profits of informed traders come, in essence, out of the returns of the uninformed. In the absence of the informed's trading profits, the uninformed would expect to precisely track the performance of the overall market. Given that the informed will take their cut, the uninformed expect to trail the market's performance by the profits of the informed. The uninformed view the informed trader's profits, however, as one more transaction cost. This is true because the uninformed only allow the informed to profit if they trade. Each uninformed trader knows that he can avoid trailing the market by not trading. The uninformed trader who never trades is assured of matching the performance of the market. It is by trading that he allows the informed to take away some value.[61] Since illiquidity led the informed to profit more per uninformed trade, illiquidity increases this transaction cost for uninformed traders, and, thus, has a feedback effect. If uninformed traders reduce their trading due to fear of fraud, they will reduce liquidity. The reduced liquidity will result in larger trading costs in the form of losses to the informed. The uninformed will counter this increased trading cost the same way they countered their fear of fraud, by requiring even higher returns or by reducing their trading and lengthening their holding periods even more.[62]

b. The Undesirable Incentive to Become Informed

Uninformed traders who want to avoid risk may try to avoid trading

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61. A simple example illustrates how the uninformed view the per-uninformed-trade profits of informed traders as a transaction cost.

Assume a firm with total capitalization of $100, $90 of which is held by uninformed traders and $10 by informed traders. Informed traders, predicting a price drop, sell $5 of their holdings, meaning informed traders hold $5 and uninformed traders $95. Informed traders' expectations materialize and the market falls 20%, leaving uninformed traders with 95% of $80, or $76, and informed traders with $4. By reducing their stake from $10 to $5, the informed avoided having it shrink from $10 to $8. Informed traders readjust their holdings to 10% ($8) until they predict a price rise, whereupon they increase their holdings to 15%, or $12. The market rises, returning to its original $100 level. Informed traders now hold $15 and uninformed traders $85. By increasing their stake the informed managed to have $12 grow to $15 instead of $10 grow to $12. In the course of the two price moves, informed traders first avoided losing $1 and subsequently gained $1 more than if they had passively held 10%. The uninformed traders trail the market by $2 and the informed traders lead it by $2.

62. Unlike the informed, the uninformed do not benefit from larger price errors or slower trading. These benefits presuppose informed trading. Larger price errors will not help the uninformed because they do not choose to buy or sell based on whether the price is inflated or a bargain. Slower trading does not help the uninformed avoid losing to the informed or to fraud because it does not impact those losses, although it may cause them to be more widely spread among uninformed traders. An extensive description of these dynamics can be found in Georgakopoulos, *supra* note 24.

those stocks subject to fraud. When uninformed traders weed out stocks affected by fraud, their trading is no longer perfectly diversified or uninformed. They may avoid fraud risk if they are accurate, but their reduced diversification may also increase their exposure to fraud. In both cases, imperfect diversification results in unsystematic risk which is undesirable. Moreover, since uninformed traders expend resources to determine which stocks are subject to fraud risk, they no longer fit the definition of uninformed traders. Their trading may still be motivated by liquidity needs, a desire to save or consume, but more remotely. Their stock choices are now motivated by information of which stocks are not subject to fraud risk.

The incentive uninformed traders have to become informed is undesirable. By diminishing the ranks of uninformed traders, fraud risk interferes with a delicate balance that preserves the efficiency and liquidity of securities markets. As we saw above,[63] the conventional version of the CAPM leads to the efficiency paradox, where as prices become perfectly accurate all trading ceases. Market Microstructure solved the paradox by identifying trading that is not motivated by information. Although informed trading is necessary for market efficiency, uninformed trading is necessary for market liquidity, which, in turn, is a prerequisite for informed trading. The result of a good mix of informed and uninformed trading is a liquid and efficient market. When the risk of fraud deters uninformed trading, it tampers with this delicate balance. Excess informed trading may give the appearance of efficiency, but it comes at the expense of liquidity.

A reduction in liquidity is very undesirable. Illiquidity hurts informed and uninformed traders, as well as the firms that seek to raise capital. It impedes the overall workings of the stock market and demoralizes traders. Because the market cannot afford to allow the potential for fraud to reduce its liquidity, it cannot have lenient requirements for the tort of securities fraud.

c. Requiring Higher Returns: Costlier Capital for Firms

While the fear of fraud may lead the uninformed to hold securities longer or to trade with information, it should lead them to value securities at a lower price. They will require that securities produce higher returns to compensate them for fraud risk.

However, allowing uninformed traders to demand higher returns from the stock market is detrimental to productivity. The purpose of capital markets is not to facilitate investment, but to help firms raise

63. *See supra* text accompanying notes 44-47.

capital. When investors demand a higher return from their investments, they force firms raising capital to pay a higher price for it. The goods of firms that face high costs of capital are axiomatically more costly than goods produced by otherwise equivalent firms with lower capital costs. Thus, lax securities fraud rules reduce productivity.

One could answer that the danger of the increased cost of capital due to laissez-faire securities fraud rules does not increase the cost of all capital but only of that which is publicly issued. Both private placements of equity and private placements of debt (usually bank financing) are possible alternatives. This answer fails regarding both equity and debt.

Inducing increased reliance on bank financing is undesirable because—as the unfortunate Japanese and German experience shows[64]—powerful banks impose their interest in risk-averse management of the corporation at the expense of shareholders and the economy, who being diversified, prefer risk-neutrality. Bondholders, who are dispersed and do not have the negotiating power of banks, cannot impose the same undesirable incentives on management.

Increased reliance on private equity financing turns the clock back over a century on corporate and securities developments. Equity holders benefit from having their stock publicly traded because it can become part of diversified portfolios, in which it will be valued by risk-neutral holders. Private holdings imply lack of diversification and, hence, risk-averse valuations of the stock. Private placements of equity will, therefore, be costlier for the firm. Public issuances also allow firms to tap a wider source of capital, enabling larger projects and corporations.

The laissez-faire-securities-fraud proponents may press their point by countering that the transition may not be from public to private financing in both equity and debt. Because debt markets are more efficient, the danger of fraud will increase the inefficiency of the equity markets more than that of the debt markets. Although firms may rely less on public equity, the shift can be toward public debt, which would counter both the undesirable reliance on bank financing as well as allow firms to solicit funds from the public. Thus, they would argue, fraud

64. *See* Roberta Romano, *A Cautionary Note on Drawing Lessons from Comparative Corporate Law*, 102 YALE L.J. 2021, 2029 (1993) (relaxation of Japanese regulations led to decline of reliance on bank financing, and more so for successful firms; this implies the old scheme promoted inefficient management; citations omitted). Professors Macey and Miller show that banks have led to inefficient risk-aversion in German and Japanese firms. Jonathan R. Macey & Geoffrey P. Miller, Corporate Governance and Commercial Banking: A Comparative Examination of Germany, Japan, and the United States (1995) (manuscript on file with Miami Law Review and the author).

risk operates as an incentive to rely on public debt financing, which may not be undesirable.

Fraud's undesirability cannot be reduced by this answer either. From a social perspective, we are not indifferent between incentives to rely on public debt or equity financing. Debt tends to be short-term compared to equity. Five, ten, even twenty year bonds are due in a small fraction of the time a corporation hopes to survive. Inducing firms to rely on debt financing leads them to favor short-term strategic concerns over long-term concerns and aggravates management's already undesirable tendency to focus on the short-term.[65]

Finally, fear of fraud will also tend to reduce the amount of capital available to firms because of the lengthening of holding periods it will force on individuals. When investors require longer horizons to invest in securities, the fraction of total wealth that is not available to finance production (cash equivalents) will increase, further increasing the cost of capital and reducing productivity.

Although no one offers empirical proof that fear of fraud leads to a lower cost of capital, it is worth noting that the United States has both the lowest cost of capital and the strictest securities regulation in the world. The cost of capital in the United States is 6% above inflation. The rest of the world has a higher cost, by nearly 50%, at more than 9% above inflation.[66] Economists have shown this difference is not due to

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65. There is an inherent bias for firms to respond to issues that influence the value of debt more than to issues that influence the value of stock—the greater efficiency of the debt market. Debt is easy to value because its future income stream is known, captured by the interest rate. Moreover, if debt valuation is wrong, it is easy to make riskless arbitrage trades to take advantage of and correct the errors. Such trades have limited risk because debt securities will mature in the relatively near future and allow the arbitrage transaction to wind up.

By contrast, the valuation of stock is much more difficult. Neither the future earnings nor the risk to the firm can be observed. Arbitrage transactions are hampered by the indefinite duration of the stock investment. Unlike debt, which is converted to cash on its due date, stocks are rarely converted to cash, except in takeovers or liquidations. Since arbitrageurs cannot predict the time at which the value of the assets they are trading will assume their true value, arbitrage transactions are more risky and less attractive. The result is that less arbitrage occurs in the stock market than in the debt markets. Since arbitrageurs monitor the accuracy of prices, debt prices are more accurate than stock prices. Professors Andrei Shleifer and Robert Vishny start with this premise and argue that the result of the difference in efficiency between debt and equity markets is detrimental because firms and corporate managers become more sensitive to fluctuations in debt value, rather than in fluctuations in stock value. Since firms and managers want to have high values for their securities (whether debt or equity) so capital will cost less, firms will respond more to those concerns which change the value of debt rather than those issues which change the value of equity. This is undesirable, Shleifer and Vishny argue, because the short-term nature of debt makes managers and firms focus on the short term, while they should focus their strategic efforts on the long term. Andrei Shleifer & Robert W. Vishny, *Equilibrium Short Horizons of Investors and Firms*, 80 AM. ECON. REV. 148 (1990).

66. *See* HANDBOOK OF MODERN FINANCE, *supra* note 46, at 18-21. Average annual returns of U.S. equities from 1960 to 1987 were 11.13% (arithmetic mean), while foreign equities returned

volatility.[67] Law-and-economics offers a better explanation: a stricter legal system, including a reduced fear of fraud. The confidence generated by a strict securities fraud regime, however, does not also imply that the current securities fraud rules are perfect. Part III of this Article argues that the current fraud-on-the-market presumption of reliance, the source of securities fraud austerity, can be further perfected.

III. RELIANCE IN DECEIT AND SECURITIES FRAUD

Part II showed that from a policy perspective, the securities markets need stricter, more austere measures against misrepresentations than real goods markets. Part III applies those conclusions to the law, specifically the fraud-on-the-market presumption of reliance in securities fraud. In order to understand the doctrine behind reliance, we must start with its common law ancestor, the reliance required for liability in deceit.

A. *Justifiable Reliance in Common Law Deceit*

Deceit is one of the more logically intricate torts. The plaintiff's own actions cause the plaintiff's injury. Recovery for self-inflicted injury is possible because the plaintiff alleges that his actions were in response to the defendant's false statement.[68] Thus, deceit involves two causal chains: one from the false statement to the plaintiff's act, and another from the plaintiff's act to his own injury. Justifiable reliance is only relevant to the first link.

1. RELIANCE AS A TEST OF CAUSATION

Reliance is an essential element in the chain of causation connecting the misrepresentation to the plaintiff's injury. The misrepresenta-

14.82%. Given that CPI inflation was an average of 5.07% (from table 18.1), U.S. equities offered 6.06% after inflation, while foreign equities offered 9.75% after inflation, a return equal to 160% of the U.S. equities. The standard deviation of the returns of U.S. equities is 16.94%, and of foreign equities 19.83%, not nearly enough to justify the 60% higher return. *Id.*

67. Economists have shown that the 8% premium of equities over debt before inflation is not explained by differences in volatility. Since the difference of volatility among domestic and international equities is proportionally smaller, the same conclusion should apply. *See* Rajnish Mehra & Edward C. Prescott, *The Equity Premium, A Puzzle*, 15 J. MONETARY ECON. 145, 154 (1985).

68. The defendant must also have made this statement with scienter—he must know it is false or disregard its accuracy—and with the intent to influence the plaintiff's actions. Although scienter and intent are controversial topics that deserve analysis, they are outside the scope of this article. Therefore, the necessary intent for culpability is assumed in this article. For more on intent, see generally WILLIAM LANDES & RICHARD POSNER, THE ECONOMIC STRUCTURE OF TORT LAW (1987); STEVEN SHAVELL, ECONOMIC ANALYSIS OF ACCIDENT LAW (1987); David W. Robertson, *Negligence Liability for Crimes and Intentional Torts Committed by Others*, 67 TUL. L. REV. 135 (1992); Steven Shavell, *An Analysis of Causation and the Scope of Liability in the Law of Torts*, 9 J. LEGAL STUD. 463 (1980) [hereinafter Shavell, *Analysis of Causation*].

tion influences the plaintiff only if the plaintiff relies on the misrepresentation in acting or refraining from action. Without the requirement of reliance, any misstatement by a defendant might give rise to crushing liability.[69] All possible plaintiffs whose actions by chance coincided with the action suggested by the misrepresentation would benefit. Hence, the element of reliance is a generally accepted test of causation.[70]

2. JUSTIFIABILITY AS A TEST OF AVOIDABLE CONSEQUENCES

Reliance, however, is not the only element of causation. Even if the plaintiff undertook the injurious actions because he believed in the defendant's statements, this response may be defective. The plaintiff may not be justified in believing the statement. A reasonable plaintiff would know it was false, irrelevant, or insignificant. Both the errors of believing the misrepresentation and the error of responding to it interrupt the chain of causation. In these cases, the plaintiff's actions and the resulting damage are the plaintiff's error. They cannot be attributed to the misrepresentation. The defendant is not held liable for those damages for the same reason that defendants are not liable for avoidable consequence injuries.[71]

An example will illustrate this point. Imagine that the misrepresentation suggests to the plaintiff that to reach the top of a rocky ledge, she should confidently climb the rocks because they are stable. If the plaintiff overlooked the existence of an obviously superior alternative to climbing, such as a nearby ladder, and was injured by unstable rocks, her deceit action will fail because her reliance is unjustified. She made an independent error by adjusting her actions to a consideration that, however deceptive, should have been immaterial. Her reliance exists but is not justified. Her injury cannot be traced to the deceptive statement because her own error interrupts the chain of causation. Therefore, the climber cannot recover for her injuries.

In sum, the justifiable reliance element of the common law tort of deceit is not different from causation. The plaintiff must plead that her actions were, in effect, caused by the defendant because she relied upon

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69. The term "crushing liability" is used by Steven Shavell in his pioneering article on economic analysis of causation to mean that if legal causation concepts are relaxed excessively, then the tortfeasor will be liable for an extraordinary number of remote consequences of the tort. This liability would crush any tortfeasor. *See* Shavell, *Analysis of Causation*, *supra* note 69.

70. One of the most respected corporate law commentators, Dean Robert Clark, calls reliance "a part of the causal chain from violation to injury." ROBERT C. CLARK, CORPORATE LAW 329 (1986).

71. *See* W. PAGE KEETON ET AL., PROSSER AND KEETON ON THE LAW OF TORTS § 65, at 458 (5th ed. 1984).

the misrepresentation. The defendant can rebut this allegation by claiming that the plaintiff's actions were due to her own error. The defendant will claim that the injury was an avoidable consequence by pleading that the plaintiff's reliance was not justifiable. Thus, reliance is identical to causation, and justifiability is identical to avoidable consequences.

The incorporation of justifiable reliance as an element of the securities fraud offense would not have given rise to any problems if modern stock exchanges had not developed. However, the efficiency of securities markets changes the way in which a statement can cause injury. In an efficient market, a misstatement can cause injury without reliance because it will influence prices. Therefore, requiring reliance as an element of securities fraud makes it underinclusive because many injured plaintiffs would not be able to recover. The courts respond to this problem, not by abolishing the reliance requirement in securities fraud actions, which would be the straightforward solution, but by presuming the securities fraud plaintiffs' reliance.

B. *Securities Fraud Reliance: Fraud-on-the-Market*

In the transition from common law to modern securities law, reliance loses much of its importance. Though causation retains its central role, the process by which modern markets set securities' prices results in a more objective causation test than reliance, which seeks to subjectively establish the cause of plaintiffs' decisions. The following discussion shows that according to securities fraud jurisprudence, an individual's actions in the modern securities markets may be influenced by a misrepresentation even if the individual has not heard the misrepresentation.

In an efficient securities market, available information is assimilated into securities prices.[72] Each piece of information adds to or subtracts from the price of the security. This does not mean that there is, by definition, one "true" price for a security. The price tends to be the market's best, yet imprecise, estimate of the present value of the future income stream that the security will produce.[73] Furthermore, statistical

72. *See generally* Gilson & Kraakman, *supra* note 48, at 568; Eugene F. Fama, *Efficient Capital Markets: A Review of Theory and Empirical Work*, 25 J. FIN. 383 (1970). *But see* Eugene F. Fama, *Efficient Markets: II*, 61 J. FIN. 1575 (1991) (finding exceptions to market efficiency). *See also* LORIE ET AL., *supra* note 56; Benoit Mandelbrot, *Forecasts of Future Prices, Unbiased Markets, and "Martingale" Models*, 39 J. BUS. 242 (1966); Paul A. Samuelson, *Proof That Properly Anticipated Prices Fluctuate Randomly*, 6 INDUS. MGMT. REV. 41 (1965).

73. That the price will tend to equal the discounted future income stream of the security is a generally accepted principle of financial economics. *See generally* ROBERT A. SCHWARTZ, EQUITY MARKETS STRUCTURE, TRADING AND PERFORMANCE (1988).

methods can only point to price changes in response to information; true price cannot be derived.

Public misrepresentations are assimilated into price as one more piece of information. By affecting prices, such misrepresentations influence all investors who trade at those prices. Without the misstatement, all investors would have transacted at a different price, regardless of reliance on the misrepresentation, or even awareness of it, because in an efficient securities market the effect of an erroneous statement influences all prices. Traders act on the statement (and may be injured by it) without having heard it because they transact at a price that is influenced by the statement. In contrast, misstatements in the common law environment injure only those whose actions are influenced.

The fraud-on-the-market presumption of reliance evolved in response to this reasoning. The presumption was developed loosely and concurrently in several federal circuits with little homogeneity or consistency, starting with dicta in the early 1970s.[74] The theory was established in the early 1980s,[75] with a lone forerunner in 1975.[76] The Supreme Court in *Basic Inc. v. Levinson*[77] offers a single coherent source for the theory. In *Basic*, the Court, starting from the premise that investors have confidence in the integrity of the market price, constructed a presumption of reliance on all public misrepresentations:

> An investor who buys or sells at the price set by the market does so in reliance on the integrity of that price. Because most publicly available information is reflected in market price, an investor's reliance on any public material misrepresentations, therefore, may be presumed for the purposes of a Rule 10b-5 action.[78]

Reliance on the misrepresentation is presumed because of investors' "reliance on the integrity of [the market] price."[79] The dissenters in

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74. *See, e.g.*, Reeder v. Mastercraft Elec. Corp., 363 F. Supp. 574, 581 (S.D.N.Y. 1973).

75. *See* Finkel v. Docutel/Olivetti Corp., 817 F.2d 356, 361 n.11 (5th Cir. 1987); Peil v. Speiser, 806 F.2d 1154, 1161 n.11 (3d Cir. 1986).

76. Blackie v. Barrack, 524 F.2d 891 (9th Cir. 1975), *cert. denied*, 429 U.S. 816 (1976).

77. 485 U.S. 224 (1987). This was a class action of sellers who allegedly sold at prices depressed because of Basic's fraudulent denials of rumors about merger negotiations. The Supreme Court reversed the circuit court's finding that statements denying rumors were per se material, as well as the district court's bright-line test that statements about corporate combinations are not material before a preliminary agreement. The Court also set case-by-case standards of materiality, defined a rebuttable fraud-on-the-market presumption of reliance, and remanded.

78. *Basic*, 485 U.S. at 247.

79. *Id.* Some circuit courts have considered this phrase not to define reliance but to be a license to develop their own fraud-on-the-market theories. *See, e.g.*, Abel v. Potomac Ins. Co., 858 F.2d 1104, 1120 (5th Cir. 1988) (stating that "*Basic* essentially allows each of the circuits room to develop its own fraud-on-the-market rules . . . a new, largely undefined, version of this presumption of reliance").

Basic, through Justice White's opinion, objected to what they saw as a claim that the market price becomes equal to "true value" through some "metaphysical process," the existence of which courts cannot ascertain: "While the scholastics of the medieval times professed a means to make such a valuation of a commodity's 'worth', I doubt that the federal courts of our time are similarly equipped."[80]

Justice White's objection was probably founded on a view that fraud-on-the-market meant that traders would be allowed to rely on the market for accurate pricing of their securities, and therefore indirectly rely on the statements that may influence these valuations. Fraud-on-the-market, however, is distinguishable from indirect reliance, which is accepted in common law deceit.[81]

1. DISTINGUISHING FRAUD-ON-THE-MARKET FROM INDIRECT RELIANCE

It is unreasonable to expect courts to determine the accuracy of market prices. But the fraud-on-the-market presumption of reliance does not require that the courts establish a security's worth. The investors' reliance on the integrity, or propriety, of market price has little to do with the level, or accuracy, of that price. The presumption is merely a claim that investors assume fraudulent information will not be encompassed in the price, an assumption which *Basic* acknowledges to be legitimate and protected by Rule 10b-5.[82] The courts only need to determine that a fraudulent statement has influenced price to the plaintiff's disadvantage and the amount by which the statement changed the price.[83] Courts need not appraise the security's "true" value.[84] Justice White's concern that the fraud-on-the-market presumption of reliance operates as a guarantee of accurate prices is wrong because the presump-

80. *Basic*, 485 U.S. at 255 (footnote omitted) (White, J., dissenting).

81. RESTATEMENT (SECOND) OF TORTS 2D § 533:

> The maker of a fraudulent misrepresentation is subject to liability for pecuniary loss to another who acts in justifiable reliance upon it if the misrepresentation, although not made directly to the other, is made to a third person and the maker intends or has reason to expect that its terms will be repeated or its substance communicated to the other, and that it will influence his conduct in the transaction or type of transaction involved.

82. *See Basic*, 485 U.S. at 245 (stating that "[t]he presumption of reliance employed in this case is consistent with, and, by facilitating Rule 10b-5 litigation, supports, the congressional policy embodied in the 1934 Act; in drafting that Act, Congress expressly relied on the premise that securities markets are influenced by information, and enacted legislation to facilitate an investor's reliance on the integrity of those markets").

83. *Id.* Both the existence of an influence and its size can easily be measured by statistical methods of finance. *See, e.g.*, Stephen J. Brown & Jerold B. Warner, *Using Daily Stock Returns: The Case of Event Studies*, 14 J. FIN. ECON. 3 (1986).

84. Notice that "true" value is distinguished from the price that the shares would command absent the misrepresentation. The courts must find the price that would prevail absent the misrepresentation, a much easier feat than ascertaining "true" value.

tion operates only as a guarantee that prices are not manipulated. Prices may be incorrect for other reasons.

Confusion of fraud-on-the-market with indirect reliance also seems to be at the center of the disagreement between the majority and the dissent in *Mirkin v. Wasserman*.[85] The dissent appears to disagree with the majority's refusal to adopt the fraud-on-the-market presumption of reliance in deceit, arguing that indirect reliance has already been adopted.[86]

Indirect reliance as an element of deceit, however, is distinguishable because the causal chain and the injury to be remedied are different. Plaintiffs in deceit actions seek to undo the consequences of their reliance, usually by rescinding the transaction into which the misrepresentation led them. By contrast, the securities fraud plaintiffs do not seek to undo their trades, but seek to recover the portion of the price that they paid or did not receive due to the inflation or depression that the misrepresentation caused. Instead of reliance causing the transaction (transaction causation), reliance in securities fraud litigation causes the trading loss (loss causation). Whether without the misrepresentation the price would have been perfectly accurate is irrelevant. At issue is the influence that the misrepresentation had on price. Under common law indirect reliance, parties whom the misrepresentation did not reach, directly or indirectly, cannot recover any overpayments they made due to the misrepresentation. By contrast, under the fraud-on-the-market presumption of reliance, parties who ignore the misrepresentation can recover overpayments made due to it.

To illustrate, envision a hypothetical investor who purchases a security. Unknown to our investor, a false statement has elevated the

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85. 858 P.2d 568 (Cal. 1993).

86. *Id.* After discussing the case law on indirect reliance, the dissent concludes:

> As this review of the relevant authorities demonstrates, the fraud-on-the-market principle that the federal courts developed in rule 10b-5 cases is fully consistent with the Restatement Second of Torts [§ 533] and with California law. In actions for intentional misrepresentation, our law has never required direct or "eyeball" reliance to sustain a claim, but has recognized the principle of indirect reliance, under which a fraudulent statement is no less actionable because it has passed through an intermediary and in the process has undergone a change in form before inducing reliance by a party who thereby suffers injury. The price of a security traded in an open and developed market may express the effect of a fraudulent statement just as surely as a credit rating (Rest.2d Torts, § 533, com. f), governmental certification (*Learjet Corp. v. Spenlinhauer*, 901 F.2d 198), doctor's prescription (*Allen v. G.D. Searle & Co.*, 708 F.Supp. 1142), or even a child's importuning of a parent to purchase a particular breakfast cereal (*Committee on Children's Television, Inc. v. General Foods Corp.*, 35 Cal.3d 197). In all such cases, the chain of causation is unbroken, and the element of reliance is established.

Id. at 590.

price of this security. The investor has only two choices: to buy or not to buy. Price cannot be negotiated. If the investor buys, the misstatement will affect his personal finances because it inflated the price at which he bought the securities. In the traditional *caveat emptor* environment of the common law, the investor would have no recourse since the misstatement did not cause the investor to purchase the security. This example illustrates a type of reliance different from the common law concept. Our investor paid more based on the misstatement, thereby acting on it. It should not matter that the investor did not hear the statement. The market "heard" it and priced the securities accordingly, while the investor perforce "relied" on the market's information and paid the market price. The fraction of the price attributable to the misrepresentation is paid in reliance on it. Because the fraud-on-the-market presumption attributes the loss due to the inflated or depressed portion of the price to the misrepresentation, courts and commentators use the term loss causation in referring to this reliance. This term contrasts with transaction causation, which refers to the function of reliance in deceit (and securities fraud in face-to-face transactions).

This loss causation function of fraud-on-the-market must be distinguished from indirect reliance leading to transaction causation. It is easy to think that the role of the fraud-on-the-market presumption is to allow reliance on the market valuation. If that was all that the fraud-on-the-market presumption did, its novelty would be marginal. An example can show that acceptance of reliance on the market's valuation is not a significant change from the common law concept of reliance. Consider a pedestrian who, with appropriate intent, misrepresented to a driver the safety of a route subject to an imminent landslide, knowing that all drivers efficiently exchange their information in meetings of the American Automobile Association (AAA). A second driver hearing the route is safe proceeds along it and is buried under the landslide. If the second driver relied on the statement of a colleague who was reproducing the pedestrian's statement, he would have indirectly relied on the pedestrian's statement and would be allowed to recover from the pedestrian under common law.[87] The example can be tied to securities markets and

87. *See, e.g.*, Varwig v. Anderson-Behel Porsche/Audi, Inc., 141 Cal. Rptr. 539 (Cal. Ct. App. 1977) (holding that final buyer of an automobile had cause of action for deceit against initial seller who misrepresented car's title because of indirect reliance on the initial seller's statement to the intermediate buyer); Committee on Children's Television, Inc. v. General Foods Corp., 673 P.2d 660 (Cal. 1983) (finding children watched misleading advertisements and requested they buy cereal, sufficiently pleaded reliance in their cause of action for deceit because of indirect reliance on the statement that was made to the children, even if the children were not alleged to have repeated the statement to their parents). In *Children's Television*, the court noted that: "[r]epetition . . . should not be a prerequisite to liability; it should be sufficient that defendant makes a misrepresentation to one group intending to influence the behavior of the ultimate

prices. Say the pedestrian had actually recommended tires to the drivers, allowing a local shop to sell tires at an inflated price of $10, while they would otherwise sell for $5. Under deceit rules, the tire purchasers who do not rely directly or indirectly on the pedestrian's statement have no recourse against him for the $5 loss they suffer when buying the tires.[88] The fraud-on-the-market theory, however, would allow recovery on the premise that the extra $5 was paid because the market was influenced by the misstatement. The difference is that common law reliance operates under the assumption that those drivers who do not like the price of tires will try to find a different shop or negotiate the price and that each individual's reasons for participating in a transaction in real goods are purely subjective and may be unrelated to price. On the other hand, investors who must buy securities have no alternative market and price is not negotiable. In the *Strauss* example, the Court noted that season-ticket buyers may have wanted to see the opposing teams or to provide business entertainment rather than to see Julius Erving play.[89]

In economic terms, as Part II explained, buyers are expected to buy if the utility they derive from the good exceeds its price. Sellers sell if prices cover their costs or their lost utility. If all buyers and sellers behave this way, goods are optimally allocated. Artificial prices, as in the tire example, cannot be maintained in the long term.[90] The *Strauss* example is distinguishable because it is not certain that the Nets would have charged less for tickets without Erving. The tickets' value would be lower for buyers who wanted to see Erving, but the demand of buyers with other motives may have sustained the same price. Indeed, it is not hard to imagine nonnative New Yorkers who may be fans of other teams, and therefore prefer the Nets without Erving. The Erving advertisement may have resulted in tickets being bought by the wrong buyers but not necessarily at a wrong price.[91]

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purchaser, and that he succeeds in this plan." *Id.* at 674; *see also* RESTATEMENT (SECOND) OF TORTS § 533 (1977):

> The maker of a fraudulent misrepresentation is subject to liability . . . to another who acts in justifiable reliance upon it if the misrepresentation, although not made directly to the other, is made to a third person and the maker intends or has reason to expect that its terms will be repeated or its substance communicated to the other, and that it will influence his conduct.

88. *See, e.g.*, Strauss v. Long Island Sports, Inc., 401 N.Y.S.2d 233 (N.Y. App. Div. 1978) (holding that buyers of New York Nets' season tickets had insufficiently homogeneous motives for buying tickets for certification of class action alleging Nets' deceit in advertising Julius Erving as a member of the team and trading him before the season started).

89. *Id.* at 236.

90. *See supra* section IIC1 and text accompanying note 27, on the temporary nature of the influence of misrepresentations.

91. Notice that the contract law remedy of rescission addresses the misallocation of real goods—they return to their seller and reenter the market.

Common law appears not to allow buyers to draw the inference that since the tires' or the tickets' price is high, that their utility to the buyers is also high. The refusal of common law to allow inferences about the goods' usefulness (the quality, value, or utility they offer) from their price is in perfect agreement with the economic theory of pricing nonfinancial goods. Under that theory, as *Strauss* illustrates, the utility each buyer derives from the good is unique and different from its price. The case with financial goods is exactly the opposite, as Part II explained.

2. THE PROBLEMATIC REQUIREMENT OF BLIND TRUST IN THE MARKET'S INTEGRITY: THE *ZLOTNICK*[92] PARADOX

Justice White's objection to the fraud-on-the-market presumption of reliance raises a different issue, perhaps unwittingly: Why the fraud-on-the-market presumption of reliance requires a blind trust in the integrity of the market.

The *Basic* Court made the presumption of reliance rebuttable rather than absolute. In the rebuttable presumption, defendants may interrupt the chain of reasoning that yields indirect reliance. There are two points in this chain where the presumed reliance may be rebutted. The first is market efficiency. Efficiency means that prices react to statements. Absent market efficiency the misstatement would not distort prices and the fraud-on-the-market presumption would not operate. Since efficiency is far from ubiquitous, this rebuttal is appropriate.[93] More inter-

92. Zlotnick v. TIE Communications, 836 F.2d 818 (3d Cir. 1988).

93. The issue of whether price was influenced by the false statement is central to this step in the fraud-on-the-market presumption and to its rebuttal, and the misrepresentation's materiality plays an important role in determining whether the price was influenced. Materiality is tested by whether the information in the misrepresentation would significantly alter the total mix of available information about the firm. *See* TSC Indus. v. Northway, Inc., 426 U.S. 438, 449 (1976); *see also Basic*, 485 U.S. at 232 ("We now expressly adopt the *TSC Industries* standard of materiality for the § 10(b) and Rule 10b-5 context."). Presumably, significant altering of information results in price changes. Hence it is connected to the issue of whether prices were, in fact, influenced under the fraud-on-the-market reliance presumption. The purpose of the element of materiality appears to be different from that of reliance. Instead of testing causation, materiality has the dual purpose of shielding trivial misrepresentations from liability and testing whether the misrepresentation is likely to influence price. By showing materiality, the plaintiff implicitly shows that the defendant's statements are likely to have influenced price. This rebuttal of the presumption of reliance allows the defendant to answer that while his statements were likely to influence prices, they did not actually affect prices; therefore, the plaintiff was not injured by the statement. Maybe the market was inefficient and did not take the misrepresentation into account, or maybe the market was perfectly efficient and saw through the statement's falsity. If the misstatement did not influence market price, the plaintiff cannot have been injured by simply transacting at the market price.

In practice, this rebuttal is confused with the "alteration of the total mix of information" test of materiality. Thus, if prices were not influenced, plaintiffs whose actions fail for lack of presumed reliance fail for immateriality of the false statements, even if the statements were important but the market determined that they were false. *See, e.g.*, *In re* Apple Computer Sec.

esting, however, is whether the presumption of reliance should be rebuttable even if the market price was influenced by the misrepresentation. *Basic* allowed rebuttal under those circumstances by hinging the presumption of reliance on the investor's trust in the integrity of market price.[94] Therefore, if the plaintiff does not trust the market price as being a fair appraisal of the security's worth, the defendant may rebut the presumption of reliance and force the plaintiff to plead and prove actual reliance, even if the market price is influenced.

The following paragraphs will use an actual case of a rebuttal under this scenario to argue that no rebuttal should be allowed on the grounds that the plaintiff did not trust the integrity of the market price. I will argue that this rebuttal exposes informed traders to fraud,[95] which is undesirable because informed traders are the source of market efficiency.[96] This rebuttal is not only undesirable from a policy perspective

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Litig., 886 F.2d 1109, 1115 (9th Cir. 1989), *cert. denied sub nom.* Schneider v. Apple Computer, Inc., 496 U.S. 943 (1990):

> We conclude that in a fraud on the market case, the defendant's failure to disclose material information may be excused where that information has been made credibly available to the market by other sources. The issue with regard to the bulk of Apple's misstatements is whether, in light of the press' documentation of [the project's] risks, a rational jury could nonetheless find a 'substantial likelihood' that full disclosures by Apple would have 'significantly altered the "total mix" of information made available.'

Id.; *see also In re* Convergent Technologies Sec. Litig., 948 F.2d 507, 513 (9th Cir. 1991) (following the *Apple* reasoning); Hanon v. Dataproducts Corp., 976 F.2d 497, 503 (9th Cir. 1992) (applying the *Apple* reasoning but rejecting defendants' contention that the market had been otherwise informed). Notice, by contrast, that an appropriate solution is to reject the presumption itself due to prices' not being influenced. *See, e.g.*, Freeman v. Laventhol & Horwath, 915 F.2d 193, 198 (6th Cir. 1990) (stating that non-existence of an efficient market makes the presumption of reliance unavailable) (citations omitted); Reingold v. Deloitte Haskins & Sells, 599 F. Supp. 1241 (S.D.N.Y. 1984).

94. The language of *Basic* is clear. Rebuttal is possible if there was either no influence on price or if the plaintiff did not trust the fairness of the market price: "Any showing that severs the link between the alleged misrepresentation and either the price received . . . or [the plaintiff's] decision to trade at a fair market price, will be sufficient to rebut the presumption of reliance." *Basic*, 485 U.S. at 248.

The Court then gives examples of possible rebuttals very similar to those about to be analyzed:

> For example, a plaintiff who believed that [the defendant's] statements were false . . . and who consequently believed that [the defendant's] stock was artificially underpriced, but sold his shares nevertheless because of other unrelated reasons, e.g., potential antitrust problems, or political pressures to divest from shares of certain businesses, could not be said to have relied on the integrity of a price he knew had been manipulated.

Id. at 249.

95. These informed traders are not "insiders" under either Section 16 of the Securities Exchange Act of 1934, 15 U.S.C. 78j-78p (1994) or SEC Rule 10b-5.

96. The activity of informed traders is desirable and beneficial in most U.S. securities markets. However, there can be too much informed trading. If all market participants are informed, then prices will be accurate but trading volume will be negligible. As discussed *supra*

as Part II showed, but it is also logically inconsistent since market efficiency is the premise of the fraud-on-the-market presumption.

The next paragraphs will argue that this rebuttal is also unnecessary from a doctrinal perspective. In common law, reliance corresponded to causation. The presumption of reliance is justified because this causal link practically always exists in securities fraud. In extraordinary circumstances where causation may be absent, the defendant must rebut the presumption to show its absence, instead of pleading the avoidable consequences defense that the misrepresentation's injury could have been avoided by the plaintiff. When formulating the rebuttal we must keep its function in mind and replicate the avoidable consequences defense in the setting of securities fraud, just as the justifiability of reliance element replicated avoidable consequences in common law deceit. The next paragraphs show that returning to common law causation concepts and pleading a traditional avoidable consequences defense to reliance replicates the rebuttal's only useful function.

Zlotnick v. TIE Communications[97] illustrates that requiring the plaintiff to show blind trust in the integrity of the market before presuming his reliance is wrong because it denies protection to the very class of traders that ensure this integrity, informed traders. Zlotnick sold short,[98] then repurchased at a loss the fraudulently inflated stock of a majority-owned subsidiary of TIE Communications. By the time Zlotnick repurchased the stock, TIE had manipulated the price of its subsidiary causing his loss. The court held that by selling short Zlotnick had manifested his disbelief in the accuracy of market price, not only at the time of the sale but also at the time of his repurchase. Since he did not trust the integrity of the market price, he could not use the fraud-on-the-market presumption.

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in section IID, this leads to a state known as the efficiency paradox, where trading ceases. In markets that approach this theoretical state, nearly all participants should be presumed to have information. At that point, large trades will move prices excessively to the trader's disadvantage. Because of this feature, uninformed traders would find it very costly to participate. I often view the German stock exchange as an example of a market close to the efficiency paradox, displaying little volume and little volatility. Some researchers, primarily Professor Robert Shiller, see the U.S. stock market as excessively volatile. *See* ROBERT J. SHILLER, MARKET VOLATILITY (1989) (collecting his earlier work); Robert J. Shiller, *Market Volatility and Investor Behavior*, 80 AM. ECON. REV. 58 (1990); Robert J. Shiller, *Speculative Prices and Popular Models*, 4 J. ECON. PERSP. 55 (1990). I see volatility as a healthy sign of uninformed trading. Unfortunately these are personal beliefs that have not been, and maybe cannot be, empirically substantiated. In essence it is the mix of informed and uninformed traders that ensures proper operation of the markets. Informed traders bring efficiency; uninformed traders save the market from the efficiency paradox. *See supra* note 48 and accompanying text.

97. 836 F.2d 818 (3d Cir. 1988).

98. Short sellers sell shares they do not yet own. First they borrow the shares, betting that the price of the shares will decline, which will allow the short-seller to repurchase the shares they owe at a lower price and thus profit from the price drop.

The result of this reasoning, however, is awkward. If investors trade because they think a price is attractive, they deny faith in accurate pricing and waive use of the presumption of reliance, according to the *Zlotnick* court. Market participants who correct market inefficiency are deprived of the benefit of a legal rule based on market efficiency. In essence, *Zlotnick* allows manipulators such as TIE Communications to outwit those who are aware of the manipulation.

The reasoning behind *Zlotnick* and *Basic* is consistent:[99] If the plaintiff does not believe that the market is efficient, he cannot use the fraud-on-the-market presumption of reliance. Under this theory the presumption exists, in essence, only for the benefit of uninformed investors, typically long-term diversified investors. Short-term speculators who bet on fast price fluctuations presumably believe prices are wrong, and lose the benefit of the fraud-on-the-market presumption. Yet efficient markets depend on the existence of these traders. Their trading corrects prices and ensures market efficiency. They do not trust the integrity of market prices, they create it. As a policy matter, informed traders must be protected against manipulators because their participation guarantees the efficiency that allows uninformed investors to participate. It is not only on policy grounds that we must allow informed traders to use the fraud-on-the-market presumption of reliance. The causal chain that fraud-on-the-market represents exists in their case; therefore, their reliance must be presumed.

3. THE CAUSAL CHAIN BEHIND INFORMED TRADING: RELIANCE EXISTS BUT AN AVOIDABLE CONSEQUENCES REBUTTAL MAY STILL BE DESIRABLE

As already explained, the causal chain connecting the defendant's misrepresentation to the plaintiff's damage is simpler in a developed securities market than in transactions in real goods. In a securities market, the plaintiff trades at a price influenced by the defendant's statement. The injury caused by trading at the disadvantageous price is attributable to the defendant's statement, regardless of the plaintiff's trust in the market's integrity or efficiency.

It is wrong to conclude that this simple concept of causation yields

99. *Basic* upholds *Zlotnick* by allowing the presumption of reliance to be rebutted in instances where the plaintiff has not relied on the integrity of the market. *See* Basic Inc. v. Levinson, 485 U.S. 224, 249 (1988) (finding "[p]etitioners also could rebut the presumption of reliance as to plaintiffs who would have divested themselves of their Basic shares without relying on the integrity of the market."). Another case which refuses to protect informed traders in an even more perverse way is Gianukos v. Loeb Rhoades & Co., 822 F.2d 648 (7th Cir. 1987), where, after Loeb Rhoades succeeded in persuading Gianukos to trade on information it had fabricated, Rhoades was able to rebut Gianukos' presumption that he relied on the information.

problematic results when applied to cases where the plaintiff knows the misrepresentation is false. The question in that situation is whether traders who knew of the misrepresentation would be given perverse incentives if they were allowed to recover their losses. The question is justified because disallowing the rebuttal appears to encourage trading that destabilizes the market. Consider the following scenario: Zlotnick had not concluded from his own research that the price was excessive but he had concluded that TIE's optimistic statement was false. Knowing that his reliance could not be rebutted if he bought at the inflated price, Zlotnick could purchase the stock and have a cause of action under securities fraud. If such trading were encouraged, it would reverse the efficiency effect that informed traders have on the market. If informed traders were to conclude that incorrect statements inflate a security's price they would buy it instead of selling it and sue under securities fraud. Their trading, instead of correcting prices, would further distort them.

The fear that in absence of a rebuttal the presumption will give rise to distortive trading is rational but unjustified. Traders who buy upon detecting fraudulent inflationary statements must immediately sell to avoid trading losses equal to their claims under securities fraud for having purchased inflated securities. Transaction costs and litigation costs make profits from such a strategy unlikely. However, a proper causation test would avoid this outcome and prevent recovery by distorting traders. Although a causal chain exists between the misstatement and the plaintiffs' injury, the injury is self-inflicted because the plaintiffs could have easily and costlessly avoided it by not trading. Because they knew the price had been influenced, the chain of causation from the misstatement to their injuries is interrupted. A simple example illustrates the point. Issuer DCT Corporation falsely announces that its earnings rose 20%, causing an analogous rise in the price of its stock. Although the reasonable trading strategy by those who saw through the misrepresentation is to sell at the new price, they may buy because under the presumption of reliance they will have a claim for the premium by buying at the inflated price.[100] Although it appears these buyers paid a premium due to the market's reliance on the misrepresentation, in fact, the buyers exposed themselves to this injury because they foresaw it and could have easily and costlessly avoided it by not trading. So instead of an elaborate theory of rebutting the presumption of reliance, we have a simpler substitute theory: the common law defense of avoidable conse-

100. In order to avoid losses due to any future price correction, they should also sell the purchased shares immediately at the same price.

quences.[101] The trader cannot recover if she could have avoided the disadvantageous trade. Since she knew the price change disadvantaged her, she must show that there were other reasons forcing her into the disadvantageous trade.

Complicating the use of this avoidable consequences defense is the argument that some plaintiffs should be allowed to recover even if they knew the misrepresentation was false because they could not avoid trading. At issue is how to determine which plaintiffs may recover and which may not. Consider, for example, the purchaser of stock on margin (i.e., credit), whose stockholdings are forcibly sold because the misrepresentation he correctly decoded depresses prices further.[102] Although the purchaser knew the statement was false, he should be allowed to recover because he was forced to sell. There was no voluntary action of the plaintiff that interrupted the chain of causation from misstatement to influenced price. The issue is to determine when this defense can be avoided. Compare the following examples. (1) An index arbitrageur knows that a certain stock price in the index she is trading is inflated because of a misrepresentation, but buys it because her investment strategy requires it. (2) A corporation about to launch a takeover must divest shares for antitrust reasons, and sells the stock knowing it is depressed by a misrepresentation. (3) A university fund manager knows that some stock prices are artificially depressed but must sell due to political pressures to divest. *Basic* offers the last two examples as clear rebuttals of the fraud-on-the-market theory for lack of trust in the market's integrity.[103] This Article suggests it is not clear whether these rebuttals are desirable.

From a policy perspective having uninformed trading in the market is beneficial in a different way than having informed traders. The uninformed provide liquidity. The index arbitrageur is a prime example of a trader who provides invaluable liquidity to the market. Her blind trading of all the stocks in the index ensures a large trading volume that allows other funds to flow easily into and out of the market.[104] Although these

101. For an explanation of the defense, see generally KEETON ET AL., *supra* note 71: The theory of avoidable consequences "denies recovery for any damages which could have been avoided by reasonable conduct on the part of the plaintiff. . . . It is suggested, therefore, that the theories of contributory negligence and avoidable consequences are in reality the same." *Id.* at 458-59.

102. *See* 12 C.F.R. § 220.4(a)(4)(d) (1991) ("If any margin call is not met in full within the required time, the creditor shall liquidate securities sufficient to meet the margin call.").

103. *Basic*, 485 U.S. at 248-49.

104. The increased liquidity associated with a stock being part of a popular market index is a likely source of the price rise and drop associated with inclusion or exclusion from the Standard & Poor's 500 index. A 3% price increase is associated with inclusion in the index. *See, e.g.*, Lawrence Harris & Eitan Gurel, *Price and Volume Effects Associated with Changes in the S&P*

investors provide a less tangible service to the market than the direct increase in efficiency resulting from informed traders, it is at least as important.[105] We should be reluctant to impose the cost of scouting for information on liquidity providers.[106]

From the perspective of causation we must examine what caused the trades in the examples. In each one, the defendant's misrepresentation created a price that would have injured a plaintiff. If the plaintiff was aware of the danger and did not avoid it, then the cause of his injury is not the defendant's statement but his own decision to trade at the disadvantaged price. This is a decision subsequent to the misrepresentation, and it interrupts the chain of causation connecting the misrepresentation to the injury suffered by trading at the influenced price.[107] Therefore, the avoidable consequences defense should bar recovery for fraud-on-the-market, although it does not literally rebut the presumed reliance. Strictly speaking, the misrepresentation caused the plaintiff's injury but the causality is interrupted because the plaintiff could have avoided the injury by not trading. If the plaintiff could not avoid trading, then the misrepresentation is the proximate cause of his injury, and he should recover.

At issue is the definition of forced or unavoidable actions in the context of the financial markets. All transactions are to a certain extent voluntary, even the liquidating transaction after a margin call if it was clearly foreseeable. At first blush it would appear that a simple cost/benefit analysis could be applied to determine whether an action is financially forced. If avoiding the trade would cost more than the amount by which the misrepresentation changed the price of the security, then the trade would be deemed forced. But one should not rush to such a conclusion because significant negative externalities appear to influence the decision not to trade, as Part II explained. The trader whose actions are typically forced is the uninformed trader, the one who creates activity and liquidity in the market. Forced trading ensures the trading volume necessary for the market's continued existence.[108]

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500 List: New Evidence for the Existence of Price Pressures, 41 J. FIN. 815 (1986); Prem C. Jain, *The Effect on Stock Price of Inclusion in or Exclusion from the S&P 500*, FIN. ANALYSTS J., Jan.-Feb. 1987, at 58.

105. Uninformed trading saves the capital markets from falling into the efficiency paradox trap. *See supra* note 98, and text accompanying note 48.

106. *See supra* section IID2a, *The Undesirable Incentive to Become Informed.*

107. *See* KEETON ET AL., *supra* note 71: "The greater number of courts have explained [contributory negligence] in terms of 'proximate cause,' saying that the plaintiff's negligence is an intervening, or insulating, cause between the defendant's negligence and the result." *Id.* at 452.

108. For a theoretical model exposing this effect of forced trading, see Ravi Bhushan, *Trading Costs, Liquidity, and Asset Holdings*, 4 REV. FIN. STUD. 343 (1991) (constructing a model of several markets for different securities that may have different liquidity). The article theorizes that

Focusing this subjective cost/benefit analysis exclusively on the plaintiff ignores the beneficial effect that his trading has on the market. Financial economics is very close to quantifying the public benefit that additional trading volume creates.[109] But until then, law-and-economic analysis cannot quantify how much forced trading is desireable for the purpose of barring the avoidable consequences defense.

Part III interpreted the element of reliance in securities fraud and indirectly argued that fraud-on-the-market practically turns reliance into a question of whether the misrepresentation influenced prices. To establish reliance under the common law tort of deceit the plaintiff injured by his own actions has to prove he relied on the defendant's statement. Thus, in common law, reliance is one link in the chain of causation connecting an actionable statement to the plaintiff's injury. At the other extreme is securities fraud, which presumes that the plaintiff relied on the statement if the plaintiff trusted the integrity of the market price (if the plaintiff traded without knowing the statement was false).

The fraud-on-the-market presumption of reliance in securities fraud consists of two propositions. First, if one trades without information, his reliance on the misstatement is irrelevant because it will be presumed the statement caused his injury, while if one trades with information (believing that prices will give him an opportunity to profit), he cannot plead securities fraud because his reliance presumption will be rebutted. This Article argued that these results are contradictory. If efficient securities markets cause false statements to move prices, the statements injure all market participants equally, regardless of whether the traders knew of or ignored the statement and its falsity.

Hinging the presumption of reliance on the plaintiff's ignorance of the statement's falsity is not only wrong, it is also undesirable for policy reasons. Securities fraud jurisprudence should aim toward market efficiency, which will in turn lead to optimal resources allocation. Market efficiency is promoted by savvy, informed traders who can accurately translate statements into prices. These informed traders, however, are the very group that the current fraud-on-the-market presumption of reliance does not protect. For the market to be efficient, informed traders must be protected. The fraud-on-the-market presumption of reliance needs an efficient market to operate, a market where statements influence prices. Statements influence prices through trading by informed

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but for the semi-forced trading of the "noise traders," a class of market participants close to the uninformed traders of this article, all informed and uninformed trading would concentrate in a single market. *Id.* at 344-45.

109. Two recent empirical studies come closest to disentangling the puzzle of the contribution of trading volume toward liquidity. *See* Hausman et al., *supra* note 47; Huang & Stoll, *supra* note 47.

traders, and securities fraud must be interpreted to protect them. The presumption of reliance must depend only on whether the false statement influenced securities prices.[110]

The preceding section presented an intuitive theory of reliance based on absolute loss causation that is only one small step ahead of the current fraud-on-the-market theory, but much closer to common law concepts of causation.[111] If a misrepresentation causes price movement, there is an injury to each plaintiff. This injury is equal to the fraction of the price that was changed to the plaintiff's disadvantage. The plaintiff's knowledge that the statement was false is a defense, which functions like avoidable consequences. The plaintiff's voluntary trade is an intervening cause interrupting the chain of causation connecting the misrepresentation to the plaintiff's injury. The plaintiff can avoid this defense by showing that she was forced to trade. The degree of force necessary to invalidate the avoidable consequences defense must be set by accounting for the benefit that trading has for liquidity. Since this determination is currently impossible, the degree of force should be determined on a case-by-case basis.

IV. CONCLUSION

This Article has argued that the fraud-on-the-market reliance presumption of securities fraud conforms to the causal chains observed in markets for financial goods. Furthermore, the benefits that result from the fraud-on-the-market presumption address social concerns over false statements about financial goods by minimizing the danger of transacting at manipulated prices. On the other hand, the structure that actual

110. Oddly, reliance as proof of the cause of the transaction (transaction causation) must retain its importance in cases where there is no transaction. If a plaintiff were able to plead securities fraud as the reason for not entering into a transaction that would have been profitable, the plaintiff must show that he did not enter into the transaction by acting on the misrepresentation.

Although this may seem inconsistent with this article's earlier analysis, it is not. Transaction causation is unnecessary when there is an open market transaction. The mechanism by which the market sets nonnegotiable prices makes transaction causation lose importance to price causation. If there is no transaction on the market, price has not yet become the item of paramount importance. All other elements of the transaction, most importantly the identity and number of shares to be bought or sold, remain unspecified. The role of transaction causation in this instance is to specify all the elements of the transaction not entered into.

Thus, it is not inconsistent to say that a securities fraud cause of action does not exist when there is no trade. *See* Blue Chip Stamps v. Manor Drug Stores, 421 U.S. 723 (1975) (holding no Rule 10b-5 cause of action if there was no purchase or sale of securities). Plaintiffs who can state a common law misrepresentation claim can still prevail.

111. Analogous arguments in favor of pure loss causation have previously been made. *See, e.g.*, Fischel, *supra* note 8; Fischel, *supra* note 18. In contrast to previous arguments, this article connects reliance in securities fraud to its common law counterpart and shows that loss causation is not a radical step, but one that follows by necessity if common law causation principles are applied to securities markets.

reliance imposes upon the tort of deceit conforms to the causal chains observed in markets for nonfinancial goods and addresses social concerns about false statements in those markets: False statements result in the allocation of goods to users other than those who value them the most. Fraud-on-the-market reliance answers concerns about securities fraud and matches its goals. Actual reliance answers deceit's concerns and matches its goals. Several other results of the actual reliance structure show it is appropriate for deceit.

Consider the remedies available to deceit plaintiffs, rescission, or out-of-pocket damages.[112] Rescission directly remedies the misallocation caused by the deceit. Out-of-pocket damages compensate the victim of the misallocation and substitute for rescission when it is unavailable or impractical. For example, the buyer of a good who would derive $1 of use from it but buys it for $3 due to a misrepresentation would receive out-of-pocket damages of $2. This compensates the $1-user buying a $3 good, but does not remedy the misallocation as rescission would.

Neither remedy is appropriate in securities fraud. Allowing only those who traded in actual reliance on the misrepresentation to recover has no effect on the avoidance of trading that the fear of erroneous prices induces. Only if everyone who traded at the influenced price can recover its inflation or deflation will the traders' fear of incorrect prices be subdued. This is what fraud-on-the-market achieves. Notice that this remedy does not correspond to any of the conventional measures of damages. It is not rescission, which prevents the defrauded buyers from retaining any profits from the trade earned after the misrepresentation is uncovered, nor is it out-of-pocket damages, which would mitigate the damage the misrepresenter owes by any gains his victims may have derived from the trade. Nor is it benefit-of-the-bargain, which should give those who were aware of the misrepresentation the stock's implied value according to the misrepresentation, and thus promote incorrect prices.

Socially desirable incentives also result from the differences between fraud-on-the-market and actual reliance. If fraud-on-the-market rules were to apply in deceit, a misrepresenter of real goods' prices would have to pay all buyers the difference in price they paid due to his misrepresentation. But since his misrepresentation would have marginal or no effect on price, he would pay little or nothing in damages and

112. *See* KEETON ET AL., *supra* note 71, at 765. Benefit-of-the-bargain damages are also awarded in deceit actions. But their use has to be attributed to those circumstances where deceit is not easy to distinguish from a breach-of-contract claim. In that case their economic justification would take us into the economics and the law of contracts.

hence face marginal or no incentives not to misrepresent. Conversely, if actual reliance was required in securities fraud, an issuer misrepresenting the value of its stock would expect to pay minimal damages because he would be liable only to those who traded in reliance on the false statement. Carrying this logic to the extreme, the issuer could ask for a trading halt, make the false announcement and expect the new opening price to reflect the misrepresentation, at a price which no speculator believing the misrepresentation would trade, hence no trader could claim actual reliance.

The interpretation suggested by this Article is not only desirable from a policy perspective and consistent with the doctrinal causation-checking function of reliance, but it is also simple for courts to apply. From the courts' perspective, the administration of an actual reliance deceit action is preferred over the fraud-on-the-market alternative, as is the fraud-on-the-market securities fraud action over the actual-reliance alternative. First, determining the price that a nonfinancial good would have had but for a misrepresentation—an element of securities fraud damages—is extremely difficult. By contrast, it is very easy in the case of financial goods, where standard statistical methods can answer the question.[113] Second, rescinding a real goods transaction is simple, while a financial goods rescission may involve a series of subsequent transactions. Admittedly, it may be difficult to determine out-of-pocket damages in real goods because it is hard to quantify the owner's actual benefits and costs. But it is nearly impossible to quantify damages with financial goods because it is anyone's guess how the injured investors would have traded without the misrepresentation. It is the gain that would have resulted from these other transactions that would represent their damages in an actual reliance, out-of-pocket damage calculation. Conversely, were the court to consider benefit-of-the-bargain damages in a securities fraud case, they again would have absolutely no guidance in determining the price that the stock should have attained had the misrepresentation been true. The statistical inferences available for such cases are very weak.

This Article defended the desirability of expanding securities fraud liability through the use of the fraud-on-the-market presumption of reliance, using a comparative analysis. Fraud in securities is more undesirable than fraud in real goods. Therefore, the fear of securities fraud liability should create stronger incentives to be truthful than fear of liability in deceit. Although this comparative analysis dictates that securities fraud rules should lead to a greater probability of liability than deceit rules, it does not establish whether the current securities fraud rules cre-

113. *See, e.g.*, Brown & Warner, *supra* note 83.

ate appropriate deterrence. The issue comes down to balancing the benefits of greater liquidity and a lower cost of capital, which would follow tougher securities fraud rules and stricter enforcement, against the cost of securities litigation and compliance. Although the benefits of a lower cost of capital are readily quantifiable,[114] the current state of economic and financial knowledge does not allow us to appraise the value of liquidity. More research is needed to answer this question. What is clear at this stage is that Congress should not eliminate the presumption of reliance.

114. One can estimate the cost-of-capital advantage of the U.S. securities markets, although it is not clear whether it should be all attributed to securities regulation. The total capitalization of U.S. securities markets at the end of 1987 stood at $2,216,000,000,000. Historically, U.S. stocks return 11.3% as opposed to 14.82% for return of foreign stocks. If the 2.216 trillion dollars of U.S. equities were priced according to a 14.82% discount rate instead of 11.3%, the total U.S. market capitalization would fall to $1,664,000,000,000. If the difference in returns is attributable to liquidity, an alternative source for this difference can be downplayed. The risk difference is marginal: 17% standard deviation for the U.S., as against 19% abroad. That means the increased liquidity gains the U.S. $552,000,000,000 of capital. The data is from HANDBOOK OF MODERN FINANCE, *supra* note 46, at 18-21 and 10-7.